The Greeks in the East

Edited by Alexandra Villing

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The British Museum Research Publication Number 157

Publishers
The British Museum
Great Russell Street
London WC1B 3DG

Series Editor
Dr Josephine Turquet

Distributors
The British Museum Press
46 Bloomsbury Street
London WC1B 3QQ

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Edited by Alexandra Villing
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ISBN 086159 157 7
ISSN 0142 4815
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Reprinted and bound in UK by Kingswood Steele

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Preface

This volume owes its existence to the 21st British Museum Classical Colloquium, *The Greeks in the East*, held on 9–10 December 1997 and organised by Louise Schofield. Since the time of the conference, however, there have been many unfortunate delays in the preparation of the papers for publication.

The papers as now presented mostly reflect the state of research in 2002, but some have been substantially updated thereafter, notably Wolf-Dietrich Niemeier's Miletus excavation report, which now includes work up to and including the 2004 season. Some papers delivered at the conference were not submitted for publication, others have in the meantime appeared elsewhere, namely:

Rosalinde Kearsley, 'Greeks Overseas in the 8th Century B.C.: Euboeans, Al Mina and Assyrian Imperialism', in: G.R. Tsetskhladze (ed.), *Ancient Greeks West and East* (Leiden, 1999), 109–34.

Brian Shefton, 'Reflections on the presence of Attic pottery at the eastern end of the Mediterranean during the Persian period', *Transeuphratène* 19 (2000), 75-82;

id., 'Some special features of Attic import on Phoenician sites in Israel', in: Actas del IV Congreso internacional de estudios fenicios y púnicos, Cádiz 2 al 6 de octubre de 1995 (Cádiz, 2000), 1121–33.

Susan Walker and Michael Hughes, 'Parian Marble in the Dynastic Monuments of Lycia and Caria', in: D.U. Schilardi and D. Katsonopoulou (eds), *Paria Lithos* (Athens, 2000), 445–51.

I should like to thank the authors for their considerable patience during the extremely long gestation period of this publication, Dr. Alexandra Villing for undertaking the difficult task of editing the papers of a conference organised before she joined the Museum, and Sir John Boardman for refereeing the resultant volume. The Department's international group of supporters, the Caryatids, helped with many of the considerable costs of organising a conference that drew speakers from France, Germany, Israel and Australia, and also contributed to the cost of publication. I am deeply grateful to them for their continued help in making research, conferences, publications and acquisitions possible in times of financial difficulty.

Dyfri Williams
Keeper of Greek and Roman Antiquities, the British Museum

Editor's note

The editor would like to express her gratitude to the authors, whose cordial cooperation and patience have made the task of editing truly enjoyable. I am also greatly indebted to Frederik Berger for scanning and processing images, to Lesley Fitton for help with checking texts, to Nigel Tallis and John Curtis for assistance with obtaining images, and especially to Josephine Turquet for her congenial collaboration in the preparation of this volume.

Alexandra Villing

Note on abbreviations

The abbreviations of journals, series and monographs used in this volume are those of the Annual of the British School at Athens; additional special abbreviations used in individual articles are specified at the end of each article before the endnotes.

Minoans, Mycenaeans, Hittites and Ionians in Western Asia Minor

New Excavations in Bronze Age Miletus-Millawanda

Wolf-Dietrich Niemeier

1. Tradition, state of research and questions

Greek tradition ascribed the foundation of Miletus to Cretans of the time of Minos, that mythical king after whom Sir Arthur Evans, the excavator of the palace of Knossos, named the Bronze Age inhabitants of Crete 'Minoans' and their civilisation 'Minoan'.[1] According to Ephoros of Kyme, Miletus was founded by Sarpedon, a brother of Minos, who brought settlers from Cretan Milatos to this place which previously had been owned by the Leleges.[2] In the 4th century BC, the time of Ephoros, this was undoubtedly the official foundation myth of Miletus.[3] During the Hellenistic period it was altered. A boy named Miletos made his appearance as the eponymous hero.[4] However, the tradition that Miletus was founded by Cretans and that the place had been owned before by the Leleges or Carians was maintained.[5] In interpreting this tradition, ancient historians are divided: some see a historical core behind it,[6] others interpret it as a reconstruction without historical background, claiming a venerable age for the city[7] and projecting back the experiences of Greek colonisation into earlier periods.[8]

However, during the excavations started at Miletus in 1899 under the directorship of Th. Wiegand and continued during the 1930s and 1950s under the directorship of C. Weickert as well as in the 1960s and 1970s under G. Kleiner, remnants of a Bronze Age settlement with three building periods were found in the area of the Temple of Athena.[9] Minoan pottery (MM III–LM IB, according to the revised Aegean high chronology used here *c.* 1750/20–1490/70)[10] was unearthed in the level of the so-called first building. During the second and third building periods, the Minoan pottery was replaced by Mycenaean pottery. The levels of the second building period contained LH IIIA:1-IIIA:2 pottery (*c.* 1445/15–1320/00),[11] those of the third building period LH IIIB–IIIC pottery (*c.* 1320/00–1100/1060/40 BC).[12] In the early 1980s it became apparent that the history of settlement at Miletus is much older than the so-called first building period: settlement debris of the Late Chalcolithic period (4th millennium BC)[13] was found in the insula to the west of the Bouleuterion[14] and underneath Heroon III.[15] There was also some evidence for a settlement phase of the Early Bronze Age (3rd millennium BC).[16]

The finds of Minoan pottery in the level of the so-called first building period in the area of the Temple of Athena appeared to confirm the tradition according to which Cretans had settled at Miletus. Thus in recent times, Miletus has played an important role in discussions about the historical reality of the 'Thalassocracy of Minos', as well as in those about the Mycenaean expansion in the Aegean and about the relations between Mycenaeans and Hittites in western Asia Minor. However, a series of important questions could not be answered with certainty due to the state of research and publication:

1. Was Miletus unpopulated between the Late Chalcolithic period and the so-called first building period or is there a continuity in settlement?[17]
2. When and how did Minoan influence start at Miletus: at the beginning of the Cretan New Palace period or earlier?[18]
3. Was the settlement of the so-called first building period a Minoan 'colony',[19] or are its Minoan features the result of trade-connections and acculturation?[20]
4. How was Minoan influence replaced by Mycenaean influence?[21]
5. What was the character of the Mycenaean influence: actual settlement[22] or trade connections and acculturation?[23]
6. What role did Miletus play within the political troubles in western Asia Minor connected with controversial and much discussed topographical names like Ahhiyawa and Millawanda?[24]

2. New excavations and results

Attempting to find answers to these questions, in 1994 my wife, Barbara, and I began a new excavation and research project on early Miletus, of which the results so far reached will be summarised here.[25] The new excavations lie to the south of the older ones and are divided from them by a Roman road with a channel under it cutting through most of the prehistoric levels (the road appears as a gap between the two excavation areas on plan **Colour Pl. 1**). Digging in the Bronze Age levels at Miletus, one is confronted with a big problem: the high level of the groundwater, which impeded our predecessors in excavating below the level of the so-called first building period. Working with a ground-water pump of the so-called Wellpoint system (**Fig. 1**),[26] we are fortunately better off than our predecessors. The pump has enabled us in the new excavations to dig deeper than the earlier excavators, and to establish that the so-called 'first

Figure 1 Miletus: Excavations in the Bronze Age levels south of the Temple of Athena 1998 with 'Wellpoint' pump system

Figure 2 Miletus I: Late Chalcolithic pit, from south

building period' does not form the beginning of human settlement in the area of the Temple of Athena. Settlement started here during the Late Chalcolithic period, as it did in the above-mentioned areas to the west of the Bouleuterion and underneath Heroon III. Above this Late Chalcolithic level, Miletus I,[27] we have a continuous stratigraphy up to the end of the Bronze Age.

a. Miletus I (Late Chalcolithic, 2nd half of 4th millennium BC)

The Miletus I settlements in the area of the Temple of Athena and at the Bouleuterion and Heroon III were situated on two islands in the vast Latmian gulf[28] which extended 60km inland.[29] The first settlers founded their villages on bedrock. Of the Miletus I settlement in the area of the Temple of Athena only several post holes, a terrace wall and a circular pit cut in the bedrock and divided by a line of stones (**Fig. 2**; on plan **Colour Pl. 1** in square 335/570), probably used as silo,[30] have survived. The Late Chalcolithic finds from Miletus belong with those from Chios, Samos, the Dodecanesian islands and the west coast of Asia Minor in an eastern Aegean cultural group.[31] There is evidence that as early as the Late Chalcolithic period the valley of the river Maeander formed an arterial route between the Aegean coast and the interior of Asia Minor.[32] Dark polished pottery decorated with white linear patterns from Miletus I (**Colour Pl. 2**) has parallels on the one hand at Beycesultan and Aphrodisias, on the other hand on the Aegean islands and the Greek mainland.[33] According to P. Sotirakopoulou, Cycladic seafarers played an important role in the distribution of this ware, which originated in western Asia Minor.[34] She sees a confirmation for this in the distribution of Melian obsidian in considerable quantities on the islands of the Dodecanese.[35] Tools of Melian obsidian have also been found in the levels of Miletus I. Four of them have been examined with neutron activation analysis by M. Bichler and D. Mandl at the Atominstitut der Österreichischen Universitäten in Vienna. All of them come from Melos, three from the quarries of Sta Nychia, one of them from Demenegaki.[36] Further inland, according to analyses by M.J. Blackman, Aphrodisias in the upper Maeander valley was supplied with Melian obsidian during the Late Chalcolithic periods 1 through 3.[37] In the Late Chalcolithic 1 and 2 periods, the Melian obsidian comprises 57% of the total, in the Late Chalcolithic 3 period, the Melian obsidian contribution rises to 100%. Blackman thinks that Aphrodisias probably was not the terminus of the Aegean obsidian trade, and that one might expect to find Melian obsidian at sites further towards the interior of Anatolia. Thus Miletus I was situated at the starting point of an obsidian route into Anatolia. At the same time, technological information on metallurgy from central and eastern Anatolia – where it has a long history going back to the end of the 9th millennium BC[38] – may have reached the Aegean via the Maeander valley and Miletus. The first Aegean copper objects of this period show a common tradition with western Asia Minor.[39]

b. Miletus II: Early Bronze Age (3rd millennium BC)

In the stratum of Miletus II we have uncovered the remnants of an offering place (plan **Colour Pl. 1**, square 330/590) with burnt bones of sheep, goats and cattle, with a group of seven marble figurines deposited around it, some of them displaced by Middle Bronze Age levelling activities. Most of the figurines are of types native to western Asia Minor and have parallels in Troy, Beycesultan, Aphrodisias, Samos and Kusura.[40] However, the head of a Cycladic marble figurine of the Early Cycladic II Keros-Syros culture, Dokathismata variety (**Colour Pl. 3**),[41] the first Cycladic figurine fragment found in a controlled excavation on the mainland of Asia Minor,[42] points to connections between Miletus II and the Cyclades. The pottery and other finds of Miletus II indicate that its population consisted of native people. However, since the Cycladic marble figurines were produced for ritual use,[43] the head from Miletus II possibly indicates the presence of some people from the Cyclades.[44] During the Early Bronze Age people from the Cyclades may have also settled at Knidos, where Cycladic marble figurines have been found in tombs[45] and at Iasos, where in a cemetery of cist tombs similar to the Cycladic ones stone and clay vessels of Cycladic type were found.[46] Apparently Miletus II participated in the intensive contacts in the Aegean area between *c.* 2550/2500–2200 BC[47] for which C. Renfrew has coined the term 'the international spirit of the Aegean Early Bronze II period'.[48] As first argued by Renfrew, the reason for this 'international spirit' was the demand for metals as well as for luxury and prestige objects which formed the major motive for trade in the Aegean area and beyond in Early Bronze II and which played an important role in the emergence of societies with distinct hierarchies.[49] As demonstrated by C. Broodbank for the Cyclades, this trade caused the formation of trader sites situated centrally on the communication lines.[50] In the north-eastern Aegean, Troy II, Poliochni, Myrina and Koukonesi on Lemnos, and Thermi on Lesbos, with their protourban settlements, were certainly such trader sites.[51] Others further to the south on the islands probably included Palamari on Skyros,[52] Emporio on Chios,[53] Heraion on Samos,[54] Seraglio on Kos,[55] Asomatos on Rhodes[56] and, on the west coast of Asia Minor, Klazomenai-Limantepe[57] and Miletus II. From Klazomenai-Limantepe the interior of Asia Minor with its rich metal sources[58] is accessible through the valley of river Hermos/Gediz, from Miletus it is accessible through the valley of the river Maeander/Büyük Menderes. Most probably, Cycladic skippers travelled in their longboats[59] to Klazomenai-Limantepe and Miletus in order to acquire Anatolian metals.[60] Probably by way of this metal trade the use of stamp seals for administrative

Figure 3 Miletus II: Fragments of Early Bronze III duck-vases

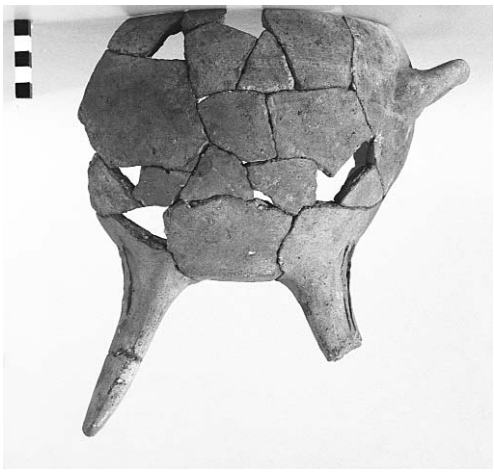

Figure 4 Miletus III: Locally produced Minoan-type tripod cooking pot

purposes was transferred from Asia Minor into the Aegean.[61] From the levels of Miletus II also come fragments of Early Bronze III duck-vases (**Fig. 3**). Although there is no scholarly consensus about where this shape was produced, whether in the Cyclades[62] possibly with Samos in addition,[63] or in south-western Asia Minor, Samos and the Dodecanese,[64] or on different islands between Aegina and the west coast of Asia Minor,[65] its wide distribution between the Greek mainland and western Asia Minor[66] forms evidence that inter-Aegean contacts were not interrupted by the turmoil in many areas of the Aegean at the transition from Early Bronze II to III.[67]

c. Miletus III: Period of the Cretan Old Palaces (MM IB–MM II, 19th–18th centuries BC)

The new excavations have provided evidence that Minoans came almost three centuries earlier to Miletus than hitherto thought, i.e. at the beginning of Miletus III, the preserved walls of which are marked green on plan **Colour Pl. 1**. At that time, the settlement in the area of the Temple of Athena was still situated on an island, which, however, was possibly connected to the mainland by an embankment.[68] The finds of imports of decorated Kamares pottery of MM IB (*c.* 1925/1900–1900/1875 BC) and MM II date (*c.* 1900/1875–1750/20 BC) (**Colour Pls 4–5**)[69] do not necessarily indicate the actual presence of Minoans since Kamares pottery was widely exported to other areas of the Aegean and the eastern Mediterranean.[70] However, the dark-faced incised ware which apparently started in MM IA[71] and of which we have found a pyxis lid (**Colour Pl. 6**)[72] appears not to have been a usual export item. Moreover we have found domestic ware of Minoan types, locally produced from the typical highly micaceous clay: an almost complete tripod cooking pot (**Fig. 4**)[73] and the legs of some further such vessels, a scuttle (**Fig. 5**),[74] small handleless cups (the protopalatial predecessors of the neopalatial conical cups)[75] and discoid loomweights of the Minoan standard type (**Fig. 6**).[76] The occurrence of typical Minoan domestic ware outside Crete is considered suggestive for the actual presence of Minoans abroad.[77] We also have found one of the kilns in which this pottery was fired. It is of a distinctive Minoan cross-draught kiln type with parallel channels leading out from a firing chamber (**Fig. 7**).[78] The oldest known example from Crete is possibly of MM II date.[79] Outside Crete this type has as yet been found only on Kos and at Miletus.[80]

Evidence for Minoan administration in Miletus III is provided by the finding of two seals and a clay sealing. The seals are a button of horn (**Colour Pl. 7**) with the representation of a Cretan goat (*agrimi*), belonging to the 'Border/Leaf Complex' or 'Archanes Script Group' of MM IA late to MM IB date (*c.* 2050/2000–1900/1875 BC),[81] and a hemicylinder of greenish serpentine with two circles with central point as seal motif (**Colour Pl. 8**), belonging to the 'Mallia Workshop Complex' of MM IB-II date (*c.* 1925/1900–1750/20 BC).[82] The sealing (**Colour Pl. 9**) of local clay is a two-hole hanging nodule, a type used in the Cretan palace administration from MM II onwards.[83] The S-hook of the impressed seal motif is very common in Minoan glyptic of the Old Palace period. The best parallels are to be found in the MM IB-II 'Mallia Workshop Complex'.[84] These Minoan objects were found among much greater quantities of local, south-western Anatolian pottery, mostly of characteristic red slip ware.[85]

Figure 5 Miletus III: Locally produced Minoan-type scuttle

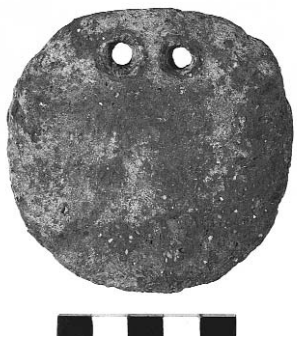

Figure 6 Miletus III: Locally produced discoid loomweight of standard Minoan type

Figure 7 Miletus III: Distinctive Minoan-type kiln with parallel channels leading out from the firing chamber

Thus the results of the most recent excavations in the earliest levels of Miletus appear to confirm the tradition delivered by Ephoros of Kyme: until the end of Period II the settlement at the temple of Athena had mainly a local, south-western Anatolian character. In the early 2nd millennium BC, at the beginning of Period III, we see the penetration of a strong Minoan element. The reason for this was most probably the same as that for the Cycladic and Cretan connections with Miletus II: the acquisition of Anatolian metals. With the foundation of the Old Palaces in Crete the demand for metals undoubtedly grew considerably, and it has been convincingly argued by M.H. Wiener that the palatial centres played a predominant role in the organisation of long-distance trading in metal.[86] There is evidence for Minoan expansion during the Old Palace period to Kythera and the southern Cyclades[87] as well as via the islands of the 'Eastern String', i.e. Kasos, Karpathos, Rhodes, Kos? and Samos, to the south-western coast of Asia (Miletus, Iasos?, Knidos?) which has been explained in connection with the metal trade.[88]

The five Minoan clay mini documents, two roundels, two noduli and a nodule recently found at Mikro Vouni on Samothrace and forming a good parallel for the Minoan seals and the nodule from Miletus, have been interpreted as evidence for Minoan activities in metal trade in the north-eastern Aegean.[89] Thirty years ago, S. Alp and D. Levi had already demonstrated that contacts between inner Anatolia and Crete must have existed during the Middle Bronze Age, as is indicated by the close relationship between a series of seal-motifs from the Old Palace at Phaistos and the Middle Bronze Age palace of Karahöyük in the plain of Konya.[90] More recently, J. Weingarten has convincingly argued that the Multiple Sealing System of Minoan Crete was introduced during the Old Palace period from Anatolia.[91] At Kültepe-Kanesh and Boğazköy-Hattuša were situated two of the Assyrian merchant colonies active in Anatolia, which imported tin and textiles into Anatolia and exported copper, silver and gold from Anatolia to Assyria.[92]

There is evidence that trade in metals and metal vessels also played an important role in Anatolian-Minoan relations. There are close connections between Crete and central Anatolia in vessels related to metal originals, and the only extant precious metal vessel of the Cretan Old Palace period, the lobed silver kantharos from Gournia, is of central Anatolian type.[93] From the Cretan Old Palace period onwards, Miletus most probably formed an important base within the metal trade route between central Anatolia and Crete, and this was the reason for the Minoan presence. The position of the settlement was ideal as a contact point between the Aegean and Anatolia throughout the history of Miletus until the Latmian gulf silted up at some time in the first millennium AD.[94] Situated at the mouth of the Latmian gulf it could on the one hand easily communicate with different areas of the Aegean and with the Maeander valley by sea and on the other hand was protected by the Latmos mountains to the east.

What was the character of the Minoan presence at Miletus during the Old Palace period? K. Branigan has defined three main types of Minoan presence abroad: 'settlement colony' (a settlement founded by immigrants on virgin ground or after the expulsion of the indigenous population), 'governed colony' (an existing settlement on which a foreign administration is imposed, often by force), and 'community colony' (an establishment of immigrants, merchants etc., without a political role in an existing foreign settlement).[95] Which of these models applied to the Minoan presence of Middle Bronze Age Miletus is difficult to answer, since only a very small part of the Middle Bronze Age settlement at the temple of Athena at Miletus has as yet been excavated. Since local pottery is numerous, I would exclude the model of the 'settlement colony'. Both other models are possible: the seals and the sealings could represent evidence for the Minoan administration of a 'governed colony', but they could also have had a commercial function in a 'community colony' of Minoan merchants, like the clay documents in the Assyrian merchant colonies in Anatolia and probably also the Minoan clay documents from Mikro Vouni on Samothrace. Here most of the pottery is of local character with close affinities to pottery from the early sub-period of Troy VI, and only few sherds show Minoan features.[96]

We hoped to get more information about the character of Minoan presence in Miletus III when digging the levels of the old palatial period in the area of the old excavations which had reached only the neopalatial level (our period Miletus IV).[97] However, the results of test-borings done by H. Brückner at the beginning of the 2004 season were surprising: under the level of Miletus IV was beach-sand, not archaeological strata. Only almost 2m below the level of Miletus IV lies a Late Chalcolithic stratum. This means that during the Early and Middle Bronze Ages, the coast line lay further to the south, in the area of the later Roman main cross-road. Only by the time of Miletus IV had the sea moved back further to the north, and the area between the later Roman main cross road and the Temple of Athena could be resettled.

d. Miletus IV: Time of the Cretan New Palaces (MM III–LM IB/II, 18th – mid-15th centuries BC)

At the time of the beginning of the Cretan New Palace period, MM III (*c.* 1750/20–1700/1680 BC), the settlement in the area of the temple of Athena at Miletus was rebuilt. This settlement Miletus IV corresponds to the so-called first building period of the earlier excavations. The strong Minoan character of this settlement has already been discussed elsewhere.[98] I am therefore

Figure 8 Miletus IVb: Fragmentary stirrup jar, LM IB Standard Tradition ware

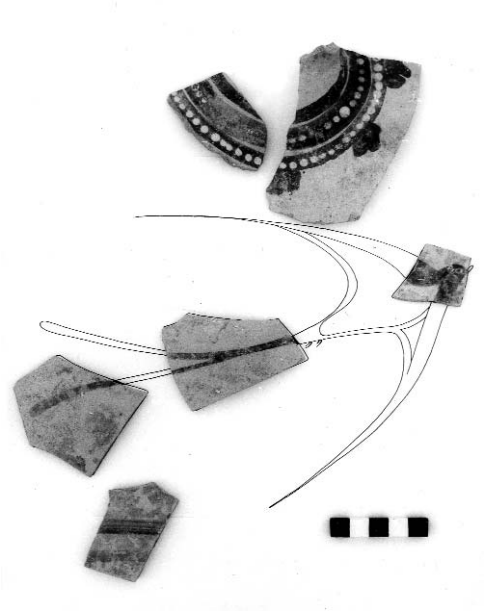

Figure 9 Miletus IVa: Fragments of a matt-painted Late Cycladic I jug from Thera

summarising here and adding some new evidence. Miletus IV had two phases. The first one, Miletus IVa (plan **Colour Pl. 1**: light blue) ended in a destruction connected with the Thera eruption, as the finds of Theran tephra in the destruction level demonstrate.[99] From the levels of Miletus IV comes imported decorated Minoan pottery of the phases MM III–LM IB/II (*c.* 1750/20–mid-15th century BC),[100] among it the fragments of fine LM IB-vessels with marine decoration ('Marine Style')[101] (**Colour Pl. 10**), most probably produced at Knossos.[102] A fragmentary stirrup jar with dot spiral decoration (**Fig. 8**) is an example of the LM IB standard tradition ware which continues motifs and compositions of the preceding LM IA period, often in a simplified and more hasty way.[103] Other pottery imports come from the Cyclades – the fragments of a Theran Late Cycladic I jug with swallow decoration (**Fig. 9**);[104] from the Greek mainland – an example is the LH IIA cup with double axe decoration (**Fig. 10**);[105] and from Cyprus – see the fragment of a Proto White Slip bowl (**Fig. 11**).[106] The only other painted pottery from these levels belongs to the south-east Minoanising Aegean Light-on-Dark and Dark-on-Light wares which certainly were produced on the island of Kos, and possibly also at other sites of the south-east Aegean.[107] But the great majority of the decorated pottery of this phase of the settlement is Minoan and was imported from different areas of Crete.[108] Like the imports of Kamares pottery at Miletus, those of fine LM I pottery cannot be used as evidence for actual Minoan presence, since – like Kamares pottery – fine LM IB pottery was exported to different areas of the eastern Mediterranean.[109] The case is, however, different with the Standard Tradition ware. It is rarely found outside Crete and mostly at sites identified as Cretan 'settlement colonies' like Trianda on Rhodes and Kastri on Kythera.[110]

How can we infer from archaeological finds the actual presence of Minoans outside Crete? Three main criteria have been proposed in the recent methodical discussions concerning the problem of the Minoan Thalassocracy:[111]

1. the occurrence of Minoan domestic pottery;[112]
2. the evidence for Minoan religion and cult practices;[113]
3. the occurrence of Minoan burial customs.[114]

Figure 10 Miletus IVb: Fragment of a LH IIA cup

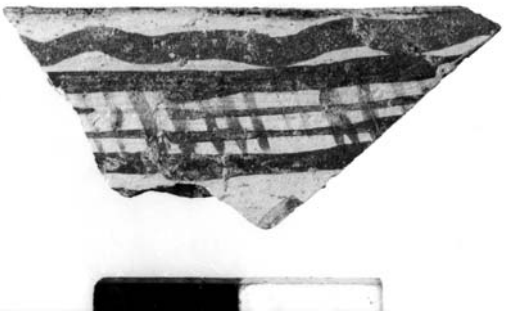

Figure 11 Miletus IVa: Fragment of a Cypriot Proto White Slip bowl

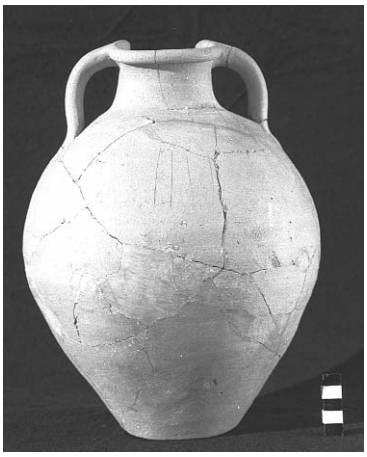

Figure 12 Miletus IVa: Locally produced Minoan-type oval mouthed amphora

Figure 13 Miletus IVa: Locally produced Minoan-type askos

The burial customs of the time of the so-called first building period are as yet unknown, since the cemetery belonging to this settlement has not yet been found. In regard to the other two criteria, the following statements can be made.

1. Domestic pottery (**Colour Pl. 11**): During the New Palace period, conical cups were omnipresent in Crete, had a variety of different functions and form at each Cretan find-place a high percentage of the pottery.[115] As J.N. Coldstream has put it in regard to the many conical cups found in Kastri on Kythera, 'a superabundance of conical cups, so it appears, was essential to the well-being of any Minoan society of this period'.[116] In this regard the Minoans of Miletus IV must indeed have felt well, since in the area of the settlement of Period IV we have so far excavated fragments of about 8,000 conical cups and about 500 complete ones. They are made from the characteristic local clay which contains much mica, as are also other typical shapes of Minoan domestic ware such as tripod cooking pots,[117] bridge-spouted jars,[118] fire stands,[119] scuttles,[120] oval mouth amphorae (**Fig. 12**),[121] askoi (**Fig. 13**),[122] fire-boxes (**Fig. 14**)[123] and loomweights of the disc-shaped Minoan standard type (**Colour Pl. 11**).[124] Direct evidence for Minoan pottery production is provided by the fragment of a clay potter's wheel of Minoan type (**Fig. 15**).[125]

2. Minoan cult practices: In 1999 we realised that the greater part of the remains of Miletus IV excavated by us belonged to a sanctuary complex. In Miletus IVa a courtyard with a central mudbrick altar with four phases formed the centre of this sanctuary (plan **Colour Pl. 1**, squares 315/585–590; **Fig. 16**). The northern half of the last altar had unfortunately been cut away by the excavations in the early 20th century. Altars in open courtyards or 'enclosures' are a typical Minoan feature, as many representations and some actual finds demonstrate.[126] Embedded in the different floor levels of the altar court were 13 simple plaster offering tables, and several conical cups, bottom upwards, were also unearthed.[127] In a side room we found, embedded in a circular pit in the pavement, burnt bones of goats, sheep and cattle with cut marks, all customary sacrificial animals in Minoan ritual.[128] The burning and burying of parts of the sacrificial animals was a popular ritual in Minoan Crete.[129] As in most other religions, the Minoan practice included cult meals connected with the sacrifice.[130] This may be the explanation for the great quantities of cooking pots and other domestic vessels found in the rooms near to the altar courtyard.

Other evidence for Minoan cult practice comes from the fragments of a rounded plastered offering table of Minoan type (**Colour Pl. 12**)[131] which possibly served as a receptacle for libations,[132] small animal clay figurines, like that of a bull (**Fig. 17**), which are frequent votives in Minoan sanctuaries,[133] the fragment of a conical rhyton with appliqué representation of a lioness running (**Colour Pl. 13**),[134] a piece of high quality, and the fragments of Minoan stone vessels of ritual use, including a serpentine vessel with pierced base,[135] i.e. a flat-based rhyton,[136] and an alabaster chalice.[137] In the 'Campstool' fresco from Knossos[138] and on the Tiryns gold ring[139] chalices are shown in representations of ritual drinking. On the Tiryns ring a lady sits on a chair and holds a chalice in which she will receive libation offerings from a procession of so-called Minoan Geniuses[140] holding jugs. According to Ch. Boulotis a similar scene was represented in the 'Campstool' fresco.[141] R. Hägg has argued that

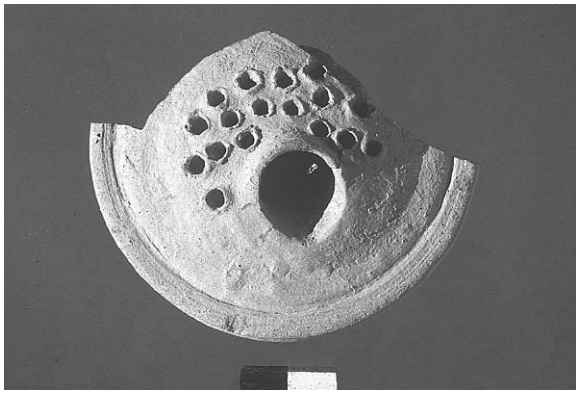

Figure 14 Miletus IVa: Locally produced Minoan-type fire-box

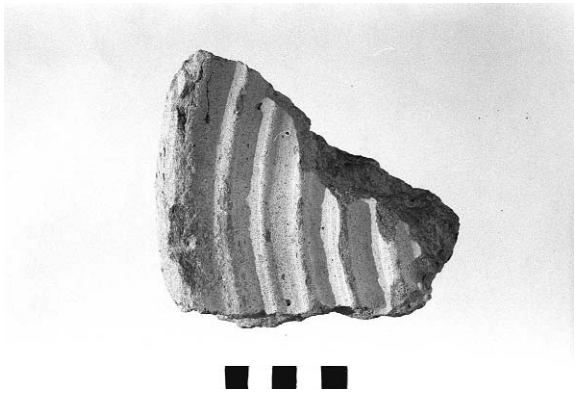

Figure 15 Miletus IVa: Fragment of a Minoan-type clay potter's wheel

Figure 16 Miletus IVa: Sanctuary with sequence of mudbrick altars in centre of courtyard, from east

rites of this type, which he called 'enacted epiphanies', were actually performed in Minoan cult, and that seated priestesses receiving offerings played the role of the goddess.[142] Therefore it is of great interest that we have found in the sanctuary a carbonised chair (**Fig. 18**) and next to it, in a niche in the wall, a fragment of a conical rhyton and a set of drinking vessels (**Fig. 19**). Rites of 'enacted epiphany' were perhaps performed in this sanctuary.

In the Minoan world, wall paintings were predominantly religious in character.[143] Therefore it is of interest that we have found numerous fragments of wall paintings executed in Minoan fresco technique[144] and showing Minoan religious iconography. The typical Minoan technique of fresco painting with additions in secco has been identified by A. Brysbaert.[145] On the fragment of a spiral frieze (**Colour Pl. 14**)[146] a string impression is distinguishable at the upper edge of the red band bordering the running spiral. In Minoan fresco painting such string impressions

Figure 18 Miletus IVa: Carbonised chair in the sanctuary

Figure 17 Miletus IVa: Small terracotta figurine

into the wet plaster served as guide lines for the paint.[147] The 'notched plume' motif of the fragment on **Colour Pl. 15** almost certainly belonged to a griffin's wing of Minoan type.[148] Other fragments from the same find-context (**Colour Pl. 16**) belong to the representation of blue papyrus umbels as we find them on fresco fragments from Knossos and Phaistos.[149] If these fragments belonged to the same fresco, it depicted griffins in a landscape with papyrus, a combination repeatedly found in Minoan iconography.[150] On fresco fragments from other rooms we see white Madonna Lilies on red ground (**Colour Pl. 17**), as on frescoes from Knossos and Amnisos,[151] and reeds (**Colour Pl. 18**) comparable to those on frescoes from Knossos and Thera.[152] In Aegean iconography griffins have a religious connotation[153] and the same applies to the lilies.[154] The Madonna Lilies probably were depicted in a sacred garden like those in Amnisos,[155] the papyruses and reeds probably formed parts of religious landscapes symbolising fertility as protected by the goddess.[156]

Some further finds are of considerable interest in connection with the question of Minoan presence at Miletus. With, now, six fragmentary Linear A inscriptions (one of them on **Fig. 20**),[157] all of them on vessels of LM IA date, the first and as yet only such inscriptions found in Asia Minor,[158] Miletus is one of the most important findplaces of Linear A outside Crete.[159] All six inscriptions were incised before the vessel was fired. Five of these vessels were made with the local highly micaceous clay, the clay of one fragment appears to be south-central Cretan.[160] The five inscriptions incised in vessels of local clay bear witness to the actual use of Linear A (and of the as yet unknown pre-hellenic language written in this script)[161] at the site, at least for commercial purposes.[162] This is of importance, as the language otherwise used (and written) in western Asia Minor was Luwian.[163]

Figure 19 Miletus IV a: Set of conical cups from the sanctuary

Figure 20 Miletus IVa: Pottery fragment with three incised Linear A signs

A disk-shaped marble balance weight is marked with six circles (**Fig. 21**). Disk-shaped pieces form by far the majority of Bronze Age Aegean stone and lead balance weights in Crete and the Cyclades.[164] Among the stones used marble is rather rare, but it occurs.[165] On Aegean disk-shaped balance weights medium-sized circles like those on our balance weight mark the number of units of a weight system[166] which was Minoan and undoubtedly established in Crete.[167] The unit of this system falls between 58.2 and 64.8gm, the mean resultant unit is 61.7gm.[168] The weight of the Milesian piece is 387gm. 387 divided by six is 63gm. The best parallels for the Milesian balance weight are stone disk-shaped balance weights with six circles from Knossos[169] and with eight circles from Praisos.[170] Both are broken, but K. Petruso was able to reconstruct the original weight of the latter as 506.9gm which divided by 8 yields a unit of 63.4gm. Thus at Miletus not only the Minoan Linear A script but also the Minoan weight system was used. Evidence for Minoan administration is indicated by two Minoan seals found in the sanctuary, a cushion shaped seal of black serpentine with a tectonic motif (**Colour Pl. 19**),[171] and a lentoid of pink quartz with the representation of a winged griffin attacked from above by a lion (**Fig. 22**).[172]

As to the architecture it may appear surprising that we have fragments of murals of high quality but that the architecture as yet excavated is relatively humble, lacking sophisticated and prestigious (as well as ritual) elements often found in buildings decorated with frescoes, such as ashlar masonry,[173] polythyra[174]

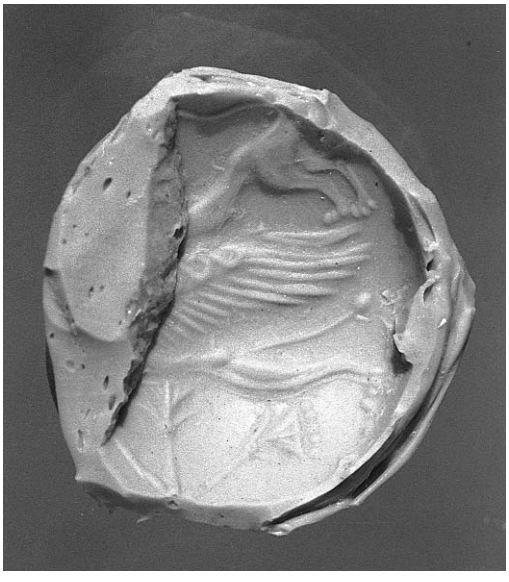

Figure 22 Miletus IVa: Impression of Minoan lentoid seal of pink quartz with a winged griffin attacked from above by a lion

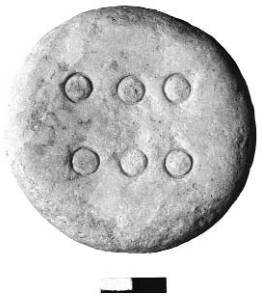

Figure 21 Miletus IVa: Minoan-type disk-shaped marble balance weight

and 'lustral basins' (adyta),[175] all of which have been found also outside Crete.[176] On the other hand, fresco paintings can also be combined with relatively humble architectural forms in Crete.[177] Wall facades of Miletus IV show the typical Minoan technique with blocks of which only the visible face was smoothed, while the backs were broken off so as to form a roughly triangular or wedge-shape.[178] The visible side does not look like true ashlar masonry, but similar slightly more crude facade walls exist in Crete, for instance in Block Beta at Palaikastro and at Kato Zakro.[179]

Finally some comments on subsistence. Systematic water sieving has produced a great number of floral remains which are currently being studied by H.-P. Stika and will provide data to compare to those of Crete and other areas of the Aegean and western Anatolia. According to J. Peters' analyses of the faunal remains of Miletus IV,[180] surprisingly, goats dominate the small livestock assemblage, the ratio sheep to goat being 1 to 2–3.[181] This is very unusual, since in western Anatolia and in mainland Greece sheep as a rule outnumber goats by far. However, in some areas of Minoan Crete, especially in the mountainous regions, and on Keos goat husbandry played a more important role.

Taken in isolation, most of the Minoan features of Period IV could be explained otherwise than as indicating permanent settlement by Minoans. Minoan fresco-paintings do not necessarily indicate actual Minoan settlement, as the examples from the Levant (Alalakh, Tel Kabri, Qatna) and Egypt (Tell el-Dab'a/Avaris) demonstrate. These are not connected with permanent Minoan presence but are due to diplomatic exchange of artisans and specialist knowledge.[182] In the same way, Minoan ritual vessels travelled, as their representations on wall paintings in tombs of nobles in Egyptian Thebes demonstrate, where they were brought by emissaries of the 'princes of Keftiu' (Crete) as diplomatic gifts to the pharaoh.[183] The Minoan type loomweights could be explained by the adoption of the Minoan weaving technology but not necessarily brought by immigrant Minoan weavers.[184] As to the use of Linear A, one could imagine that the Minoan language was at that time used in the Aegean as a *lingua franca* for commercial purposes.[185] The Minoan weight system could have been adopted outside Crete for the simple reason of economic expediency.[186] But what about the occurrence of the Minoan type domestic ware, which makes up more than 95% of the pottery from the area of Miletus IV so far excavated by us? M. Melas has tried to explain this and the other Minoan features at Miletus and other sites in the Aegean by saying 'that the superior cultural achievements of palatial Crete gradually asserted themselves in local import and copying of various artefacts'.[187] As far as Miletus is concerned, however, western Asia Minor had its own cultural achievements not at all inferior to those of the Minoan civilisation[188] as well as a strong pottery tradition.[189]

As ethnoarchaeology has demonstrated, 'culture traits, artefacts or attributes are often poor indicators of ethnicity when considered individually. However, the study of overall artefact, attribute and trait patterns may prove more helpful in defining ethnic groups'.[190] Therefore the occurrence in Miletus IV of all the Minoan traits mentioned, especially of the Minoan domestic ware making up more than 95 % of the pottery, should be interpreted as evidence for Minoan presence. The material culture of Miletus IV is almost entirely Minoan. In this regard Miletus differs from the 'Minoanised' Cycladic sites of Akrotiri on Thera, Phylakopi on Melos, and Ayia Irini on Keos, which beside the Minoan influence show strong local traditions especially in the pottery,[191] and joins Kastri on Kythera and Trianda on Rhodes, both of which have been interpreted as Minoan 'settlement colonies'.[192] In this connection the high ratio of goats in the small livestock assemblage is also of interest, since migrant population groups continue – if possible – their previous subsistence strategy.[193] According to the investigations by Peters, in post-Minoan times the importance of sheep husbandry increased at the expense of goat keeping, so that in Archaic times, sheep dominated the small livestock herds in the Miletus region (the ratio of sheep to goat is 4:1).

As to the character of the Minoan presence at Miletus, I would exclude Branigan's model of the 'community colony', since in this type of colony the foreigners 'tend for obvious reasons to keep a low profile and adopt the local style of housing'.[194] The building complex of Miletus IV with the frescoes and the sanctuary excavated by us could have been a 'governor's residence', i.e. the seat of a Minoan elite and administration as anticipated by Branigan for his model of the 'governed colony'.[195] If the settlement Miletus IV was a 'governed colony', the almost completely Minoan character of the finds in the area as yet excavated should change to a more local character in other areas of the settlement. Up to now *c.* 1,300m^2 of Miletus IV have been excavated without any indication of a spatial change in the material culture. Therefore, the more we excavate, the more we tend to apply Branigan's 'settlement colony' model for Miletus IV. If this is correct, there was a change in the character of the Minoan presence between Miletus III to Miletus IV from a 'community colony' or 'governed colony' to a 'settlement colony' with new settlers from Crete.

Miletus is not the only place in the south-eastern Aegean where Minoans settled in the Cretan New Palace period (map **Fig. 23**). This is indicated by buildings of Minoan types at Trianda

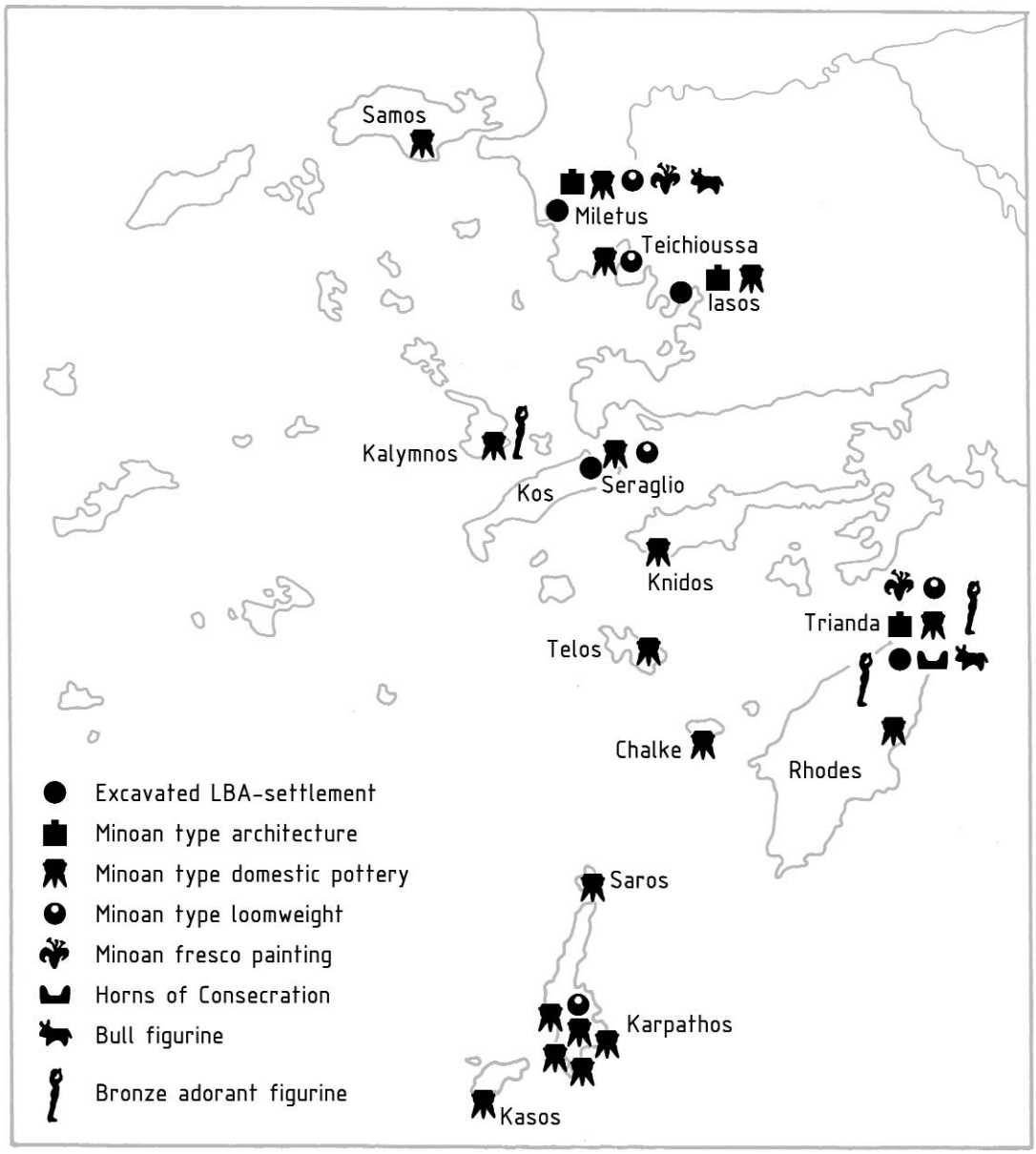

Figure 23 Evidence for Minoan presence in the south-eastern Aegean in LM I

on Rhodes[196] and at Iasos in Caria,[197] Minoan type domestic pottery from different sites on Kasos, Karpathos, and Saros,[198] from Ialysos[199] and other sites on Rhodes,[200] from Chalke,[201] from Telos,[202] from Serraglio in Kos,[203] from the Vathy cave on Kalymnos,[204] from the Kastro Hill and the Heraion on Samos,[205] from Knidos,[206] Iasos,[207] Teichioussa-Kömüradası[208] and Tavsanadası;[209] Minoan type disk-shaped loomweights from Palio Mitato on Karpathos,[210] Trianda on Rhodes,[211] Serraglio on Kos,[212] Iasos[213] and Teichioussa-Kömüradası;[214] wall frescoes of Minoan technique and iconography,[215] stone horns of consecration,[216] a bull figurine,[217] all from Trianda on Rhodes; Minoan type bronze figurines of female and male adorants[218] from Trianda[219] and Kalamonas[220] on Rhodes as well as from the Vathy Cave on Kalymnos.[221] Trianda apparently was a 'settlement colony' like probably also Miletus IV. For the other sites we as yet do not have enough information to define the exact type of Minoan presence.

As mentioned above, Minoans had settled at a number of these sites of the 'Eastern String' as early as the Old Palace period. I think that all this forms further evidence for the historical reality of the tradition of the 'Thalassocracy of Minos',[222] i.e. for the existence of a Minoan sea empire with footholds of different types on the Aegean islands and the west coast of Asia Minor. This tradition, which should not be ignored,[223] has been unconvincingly interpreted by some ancient historians as a fantasy or as justification of the predominance of Athens in the Delian League.[224] Why should, however, the Athenians of the 5th century BC choose Minos as legendary predecessor of their hegemony? Newly created myths normally refer to local heroes,[225] as the example of Theseus shows.[226] Moreover, long before the 5th century BC, Hesiod already knew that Minos 'ruled over most of mankind who dwelt about'.[227] Excavations at several of the places connected by Greek tradition with the 'Thalassocracy of Minos' have provided evidence for Minoan presence: the Cyclades[228] and especially Keos,[229] Karpathos,[230] parts of the west coast of Asia Minor,[231] and especially Miletus.[232] Moreover, the Egyptian sources of the XVIII Dynasty describe Crete (Keftiu) as the centre of a larger island complex.[233]

Evidence for Minoan contacts leading further to the interior of Asia Minor during the Cretan New Palace period is provided by the imports of Anatolian prestige items like the sceptre head in the form of a leopard found at Mallia,[234] the silver cup in the form of a stag from Shaft Grave IV at Mycenae which possibly came to Mycenae via Crete through royal gift exchange[235] and an Old Hittite relief vase from Hüseyindede in the district of Corum, east of Ankara, with representations of ritual activities, among them bull leaping, which is a characteristic Minoan phenomenon.[236]

Miletus IV suffered two destructions. That of Miletus IVa happened – as already mentioned – in connection with the Thera eruption, when tephra was thrown high up in the air and blown by strong winds to the east, where it fell down.[237] The tephra fall had been identified already in the sea bed of the south-eastern Aegean,[238] on Rhodes,[239] and on Kos[240] as well as in western Asia Minor in sediment cores from the Gölcük, Köyegiz and Gölhisar lakes.[241] W. Voigtländer had claimed to have found Theran tephra at Kömüradası, but the ashes in question have not been analysed.[242] In the LM IA destruction level of Miletus IVa[243] we have found layers of tephra which, according to the analyses by M. Bichler (Vienna), come from the Thera eruption.[244] A stratum of Theran tephra has now also been identified at Iasos.[245] After the LM IA destruction at Miletus IVa, the ruins filled with destruction debris were levelled and the settlement was rebuilt.[246] The destruction of Miletus IVb marked the end of Minoan predominance at Miletus. The destruction level of Miletus IVB has unfortunately been destroyed to a large extent by later building activities and the earlier excavations. An imported LH IIB pithoid jar (**Fig. 24**)[247] and some other pottery sherds appear to indicate that this destruction happened at the very end of LM IB or in LM II,[248] i.e. during the 15th century BC.

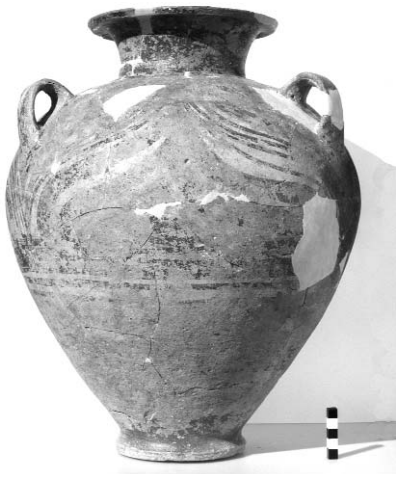

Figure 24 Miletus IVb: LH IIB pithoid jar from the destruction layer

The final destruction of the settlement of Miletus IV belongs to a series of LM IB-II destructions in Crete and on the Aegean islands marking the end of Minoan domination in the Aegean, followed by Mycenaean domination from LH IIIA:1-2 onwards.[249] The processes which led to these changes are still under discussion. Since S. Marinatos' theory, according to which the Cretan destructions were caused directly by the Thera eruption,[250] has been refuted by volcanological and archaeological research,[251] two theories remain. According to the first, most strongly voiced by S. Hood and M.R. Popham, the Mycenaeans conquered Crete and the Cycladic islands at the end of LM IB;[252] according to the second – to which I have subscribed – the Cretan destructions were caused by internal conflicts after which Mycenaeans, taking advantage of the weakening of Minoan power, subsequently occupied the Cycladic islands, Crete and the islands in the south-eastern Aegean.[253] Recently, J. Driessen and C.F. MacDonald have argued that in the long term, the Thera eruption caused severe economic dislocation and the destabilisation of political and religious authorities and therewith produced a crisis leading to the destabilisation and inner conflicts in LM IB-II.[254]

e. Miletus V–VI: LH IIIA:1/2 – LH IIIC (second half of 15th to 11th centuries BC)

According to the Mycenaean pottery found, Miletus V started in LH IIIA:1[255] (*c.* 1445/15–1390/70 BC), but most of the Mycenaean pottery comes from the destruction level of the Period V settlement and is of LH IIIA:2 date (*c.* 1390/70–*c.* 1320/1300 BC) (**Fig. 25**),[256] some of it late in the period or transitional LH IIIA:2/B:1 in date.[257] As to the problem of whether Mycenaeans lived in the Period V settlement, the locally produced undecorated domestic pottery is again of importance. This consists almost exclusively of Mycenaean types, for instance lipless bowls,[258] tripod cooking pots[259] and pithoi.[260] Almost all pottery of Period V excavated by us is Mycenaean: there are only a

Figure 25 Miletus V: LH IIIA:2 pottery from the destruction level

few clay vessels of western Anatolian character.[261] This appears to indicate that Mycenaean Greeks were the main settlers in Miletus V. Further evidence for this is provided by Mycenaean terracotta figurines of ritual function (**Fig. 26**).[262]

Of the architecture of Miletus V, two houses are well enough preserved to be compared to Mycenaean houses in Greece. One (plan **Colour Pl. 1**, squares 345–50/610–15, plan **Fig. 27**)[263] appears to belong to G. Hiesel's type of the Anta-House with open vestibule,[264] House B (plan **Colour Pl. 1**, squares 320–30/590–600, plan **Fig. 28**)[265] to Hiesel's Oikos 2 type with closed vestibule.[266] In its south-eastern part we found a rounded clay hearth comparable to clay hearths in Mycenaean houses at Mycenae and Tiryns.[267] The occurrence of the Anta House and of the rounded clay hearth do not, however, provide clear evidence for Mycenaean presence, since as on the Greek mainland[268] the Anta House also has a long tradition in western Asia Minor,[269] and rounded clay hearths like the Mycenaean ones exist also in Middle Bronze Age Beycesultan Iva.[270] On the other hand, while the Oikos 2 type house existed on the Greek mainland from the Early Bronze Age onwards,[271] the earliest example known to me in western Asia Minor is the Pillar House of Late Bronze Age Troy VI Late.[272]

It is remarkable that as many as eight potters' kilns constructed with mudbricks have been found in the area of Miletus V so far excavated: four kilns during the excavations in the 1950s and 1960s, three in 1995 and one in 2002 (plan **Colour Pl. 1**). The kilns found up to 1995 have been discussed elsewhere.[273] They are of two main types. The kilns of the first type are round and have a central pillar or two benches in the chamber for placing the pottery to be fired.[274] Kilns of this type

Figure 26 Miletus V: Fragmentary Mycenaean terracotta bull figurine

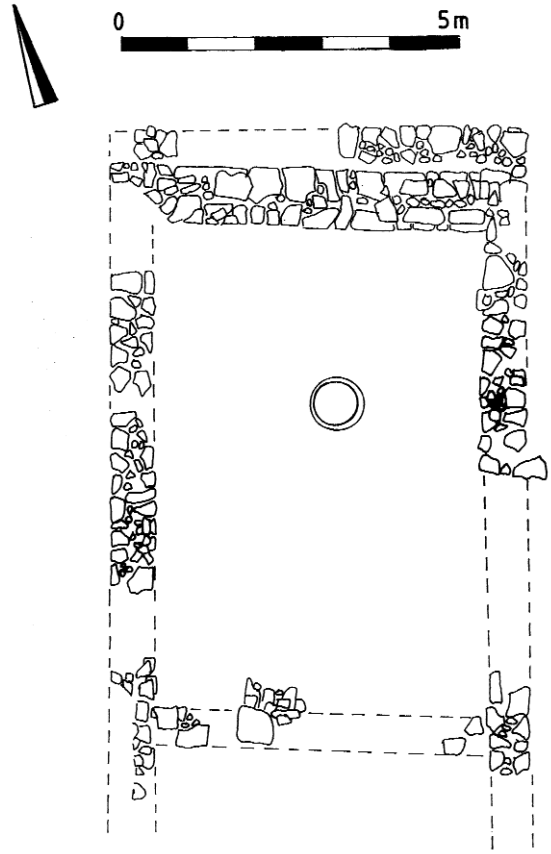

Figure 27 Miletus V: Plan of House A

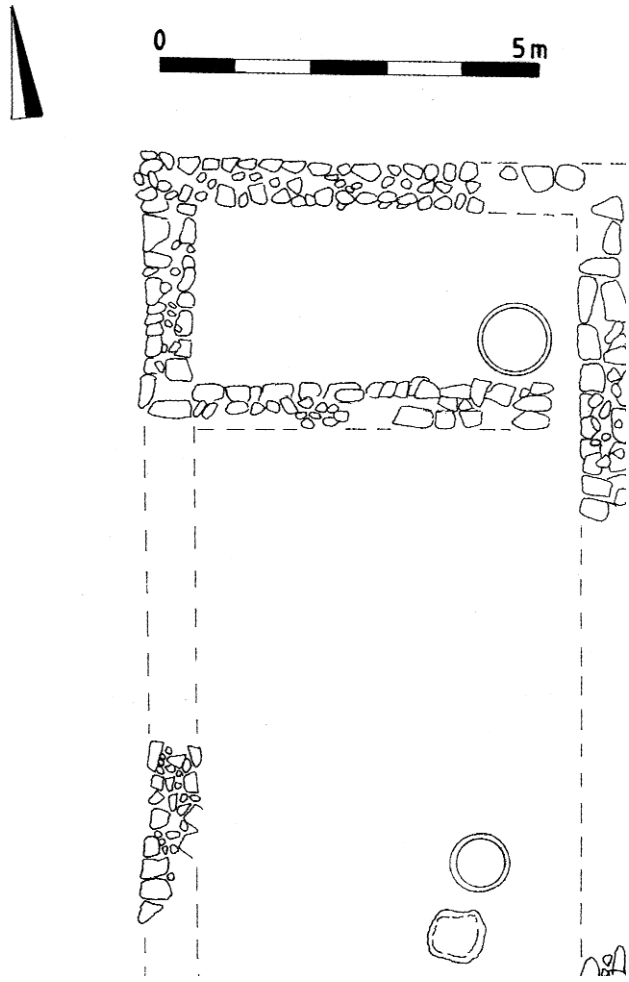

Figure 28 Miletus V: Plan of House B of Oikos 2 type

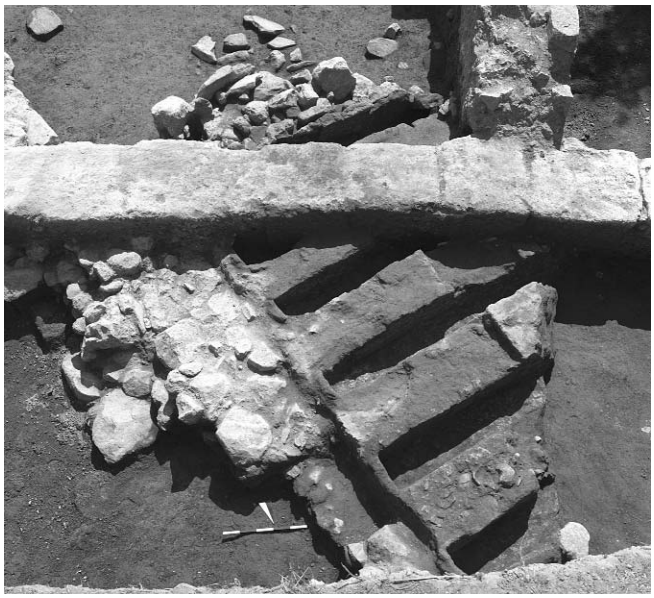

Figure 29 Miletus V: Kiln with a series of parallel channels

existed in the Greek mainland from the Middle Helladic period on.[275] Therefore one could be tempted to interpret the kilns of this type in Miletus V as a Mycenaean feature. Middle Bronze Age kilns of this type found at Klazomenai-Limantepe[276] and Kocabaş Tepe[277] were, however, built before there was any Mycenaean presence or influence in western Asia Minor. The second type, with a series of parallel channels (**Fig. 29**), is Minoan in origin, as discussed for the Miletus III example.[278] Two further examples of this kiln type were found in 1971 and 1973 *c.* 500m further to the south of the settlement in the area of the Temple of Athena.[279] They are of Miletus VI date, when the potters' quarter was apparently moved to the south. The three examples of this type of Miletus V date and two of Miletus VI date form evidence for the survival of Minoan potters' traditions in Mycenaean Miletus. The eight potters' kilns as yet found in Miletus V form one of the greatest concentrations known from the Bronze Age Aegean[280] and demonstrate that Mycenaean Miletus was an important pottery production centre.[281] In the time of Miletus V Mycenaean pottery produced at Miletus was exported on a regional basis in south-western Asia Minor, to the Halikarnassos/Bodrum peninsula,[282] in the time of Miletus VI possibly as far as Tiryns in the Argolid[283] and Ugarit in Syria.[284] Coming back to Miletus V, this settlement ended during the late 14th century BC in a heavy fire-destruction of which a level of burnt debris with a thickness of *c.* 30cm extends over the entire excavated area.[285]

Due to later building activities and the earlier excavations we found only few pottery deposits of Miletus VI. These did not

Figure 30 Miletus VI: Group of locally produced Mycenaean type domestic vessels

contain pottery of western Anatolian character. From a well of Miletus VI excavated by us comes a group of Mycenaean type domestic vessels made in local clay (**Fig. 30**).[286] A lentoid of onyx-marble with the representation of a quadruped belonging to J.G. Younger's 'Island Sanctuaries Group' (**Fig. 31**)[287] provides evidence for Mycenaean administration in Miletus V or VI.[288]

No script has yet been found in Miletus V. From Miletus VI come two fragments of pithos-necks of local clay on each of which a sign was incised before firing (**Fig. 32**). Both of them are possibly Linear B signs.[289] If the arrow-like sign of the fragment **Fig. 32a** is a Linear B sign, it can only be sign no. 20, *-zo-* .[290] The missing horizontal bar could have been placed rather low and broken away.[291] But arrow-like signs similar to the Milesian example appear also on Hittite clay vessels.[292] The sign of the fragment on **Fig. 32b** has no Hittite parallel. According to T.G. Palaima it could be a regional Milesian variant of sign no. 52, *-no-*, approximately corresponding to the prototype of a painted stirrup jar inscription from Thebes.[293] If the two signs really are Linear B signs, their use is unusual and a regional feature. There are no other known Linear B signs incised on clay vessels. The only Linear B inscriptions on clay vessels are those painted on inscribed stirrup jars and some other vases.[294]

As to the architecture of Miletus VI, I shall subsequently discuss its most striking feature, the fortification wall in the north. Of the houses all but one (plan **Colour Pl. 1**, squares 340–45/600–10; plan **Fig. 33**) – partly excavated in the beginning of the 20th century century[295] – were not well preserved. The house in question is most probably to be reconstructed as a building of Hiesel's type of the Corridor House, characterised by a central corridor, dividing the house into two parts, one

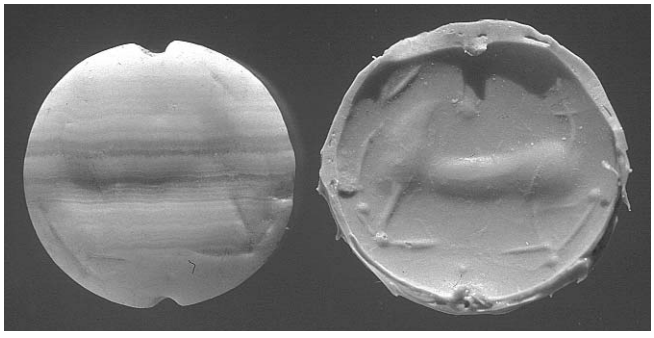

Figure 31 Miletus V-VI: Mycenaean lentoid seal of onyx-marble of the 'Island Sanctuary Group', with impression

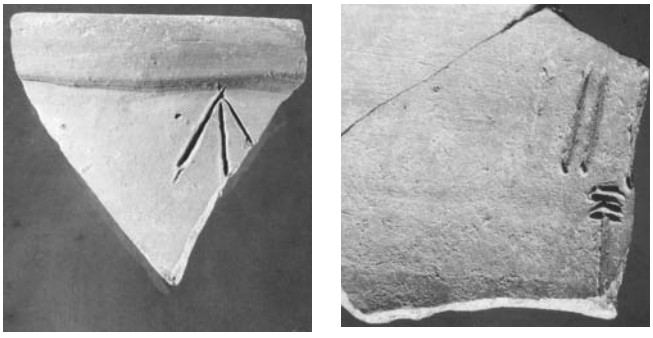

Figure 32a, b Miletus VI: Fragments of pithos-necks of local clay from Miletus VI, possibly with Linear B signs

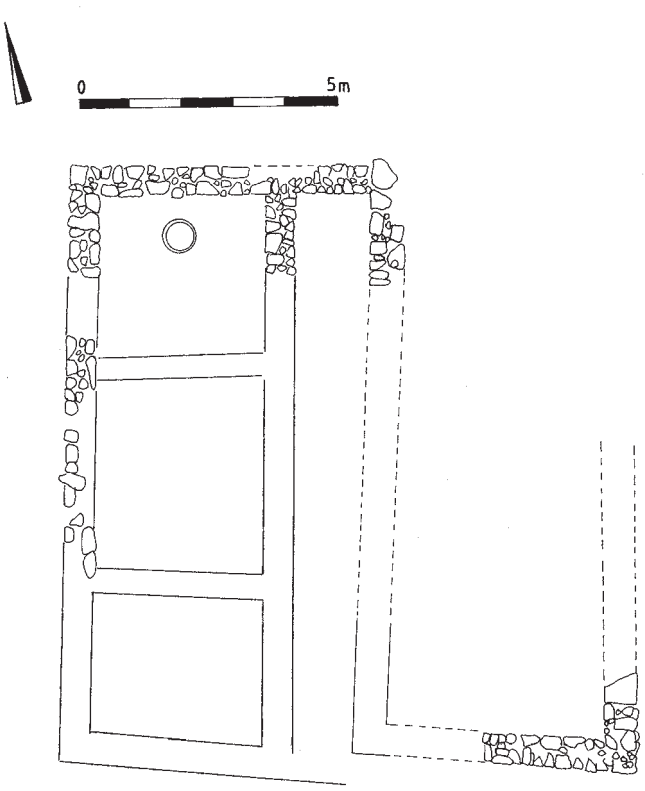

Figure 33 Miletus IV: Plan of Corridor House

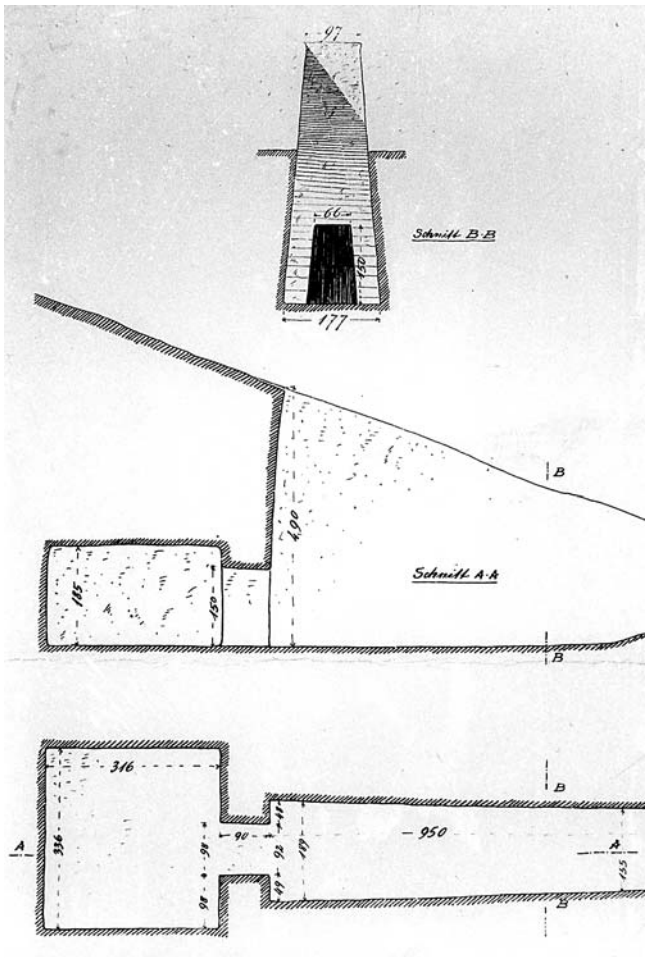

Figure 34 Miletus VI: Değirmentepe Mycenaean chamber tomb 2, plan and sections (drawing by A. Zippelius)

containing the living rooms, the other magazines, and to be found during the 14th and13th centuries BC all over the Mycenaean world, in the Argolid, Laconia and Messenia,[296] and beyond the Greek mainland on Melos at Phylakopi,[297] in Crete at Ayia Triada,[298] Gournia[299] and Koumoi (Rethymnon).[300] Outside the Mycenaean world the Corridor House is unknown.

Evidence for Mycenaean ritual during the so-called third building period is again provided by female terracotta figurines, now of the psi-type,[301] as well as of terracotta animal figurines.[302] Moreover, we have from Period VI evidence for Mycenaean burial rites: on the east slope of the hill Değirmentepe, 1.5km south-west of the Minoan-Mycenaean settlement in the area of the Temple of Athena, 11 chamber tombs of Mycenaean type were excavated in 1908.[303] The finds were brought to Berlin, where they were on exhibition before World War II,[304] and were thought to have been lost at the end of the war.[305] After their evacuation during the war they returned, however, to the Berlin museums, the smaller part to the Antikenabteilung in West Berlin (Charlottenburg) where it was exhibited after the reorganisation of the Antikenabteilung in 1974,[306] the bigger part to the Pergamon Museum in East Berlin, where it mostly remained hidden in the storerooms.[307] After the re-unification of Germany, it turned out that almost all the missing pieces were kept in the storerooms of the Pergamon Museum, as were the original excavation records. After the reorganisation of the Berlin museums we are now working on the publication of the Mycenaean cemetery of Değirmentepe almost 100 years after its excavation. The tombs are canonical Mycenaean chamber tombs (**Fig. 34**).[308] Most of the grave goods are of Mycenaean character. They include pottery of LH IIIB-C date,[309] jewellery, for instance flat beads of blue glass with a volute (**Colour Pl. 20**)[310] and gold rosettes (**Colour Pl. 21**),[311] further folded lead net weights[312] and bronze weapons: spearheads, arrowheads and swords (**Fig. 39** left).[313]

The change from Minoan influence and presence to Mycenaean influence and presence in Period V is paralleled by similar developments at other sites on the south-eastern Aegean islands and the south-east coast of Asia Minor (map **Fig. 35**). Of the main criteria mentioned above in connection with Minoan presence in the south-east Aegean, domestic pottery of Mycenaean type is known from Trianda/Ialysos[314] and other sites[315] on Rhodes as well as from Serraglio on Kos;[316] the Mycenaean chamber tomb is adopted early in LH IIIA:1 and widely used in the south-east Aegean from LH IIIA:2 on:[317] on Rhodes,[318] Kos,[319] Kalymnos,[320] Astypalaia,[321] Samos,[322] Müsgebi[323] and Milas[324] on the Halikarnassos/Bodrum peninsula (the chamber tombs on Karpathos are a different case)[325]; evidence for Mycenaean ritual is provided by Mycenaean clay figurines of women and animals from the settlement and cemetery of Trianda/Ialysos,[326] from the settlement of Serraglio[327] and the cemetery of Eleona and Langada on Kos,[328] from Iasos as well as from the Heraion on Samos.[329] Although the different sites may have developed along different lines in the course of LH III,[330] there was a zone of Mycenaean settlements in the south-eastern Aegean, comprising islands between Rhodes in the south and Samos in the north as well as in the southern part of the west coast of Asia Minor between the Halikarnassos/Bodrum peninsula in the south and Miletus in the north.[331]

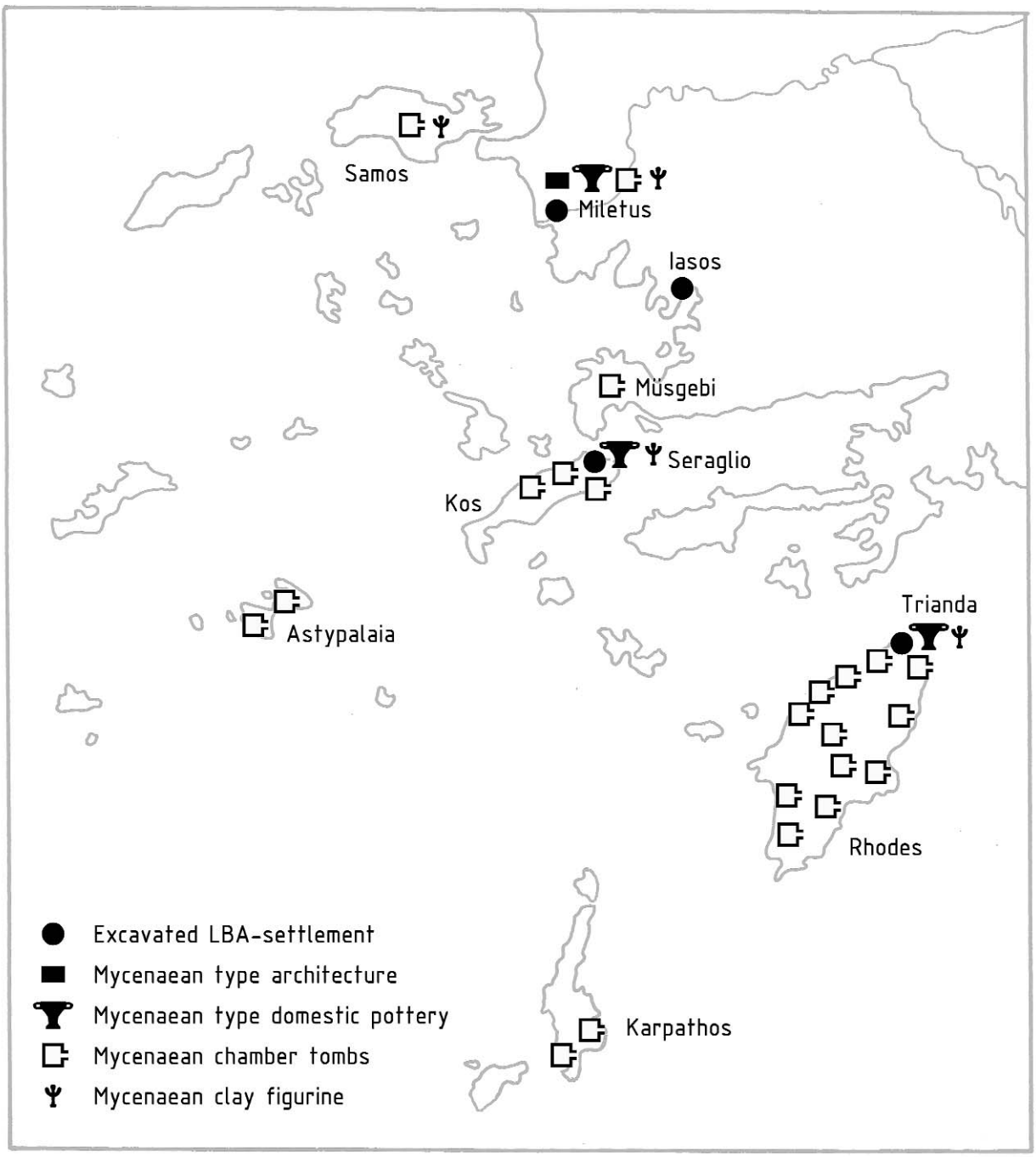

Figure 35 Evidence for Mycenaean presence in the south-eastern Aegean

Mycenaean pottery and other artefacts of Mycenaean type come also from the coastal area and the eastern Aegean islands to the north of this zone (map **Fig. 36**):[332] Mycenaean pottery from Kadı Kalesı,[333] Kusadası ,[334] Ephesos,[335] Halkapinar,[336] Kolophon,[337] Bademgedigi Tepe,[338] Bakla Tepe,[339] Ceşme,[340] Erythrai,[341] Klazomenai-Limantepe,[342] Bayraklı (Old Smyrna),[343] Panaztepe,[344] Phokaia/Foça,[345] Larisa,[346] Çerkes Sultaniye,[347] Elaia,[348] Pitane/Çandarlı ,[349] Beşik Bay,[350] Troia VI–VIIa,[351] Chios,[352] Psara,[353] Lesbos,[354] Lemnos,[355] and Imbros/Gökçeada;[356] Mycenaean clay figurines from Klazomenai-Limantepe[357] and Lemnos;[358] Mycenaean and Mycenaeanising seals from Smyrna/Izmir(?),[359] Bakla Tepe,[360] Klazomenai-Limantepe,[361] Panaztepe,[362] Beşik Bay,[363] Troy,[364] Psara[365] and Lemnos;[366] Mycenaean jewellery from Bakla Tepe,[367] Panaztepe[368] and Psara;[369] Mycenaean ivory carvings from Bakla Tepe[370] and Troy;[371] Mycenaean bronze weapons from Smyrna/Izmir,[372] Panaztepe,[373] Pergamon(?),[374] Beşik Bay[375] and Psara.[376] Where the context is known, these Mycenaean objects were found, however, in tombs of local type, cist tombs[377] at Panaztepe,[378] Beşik Bay,[379] on Chios,[380] Psara,[381] Lesbos;[382] pithos and urn burials at Panaztepe,[383] Troy VI late,[384] Beşik Bay;[385] tholos-tombs of non-Mycenaean type[386] at Kolophon[387] and Panaztepe;[388] built rectangular tombs[389] at Bakla Tepe,[390] Beşik Bay,[391] on Psara[392] and Lesbos.[393] The tomb with LH IIIA:1-IIIA:2 pottery excavated on the citadel of Ayasoluk at Ephesos/Selçuk was found disturbed and therefore its type is uncertain.[394] The burial of human bones in a krater appears to indicate non-Mycenaean burial customs.[395] In most of the settlement and cemetery contexts excavated on the west coast of Asia Minor to the north of Miletus and on the islands in front of it, the quantity of Mycenaean pottery appears to be rather small in relation to the native wares.[396] In Troy VI F-H the Mycenaean constitutes, for instance, not more than 1–2% of the

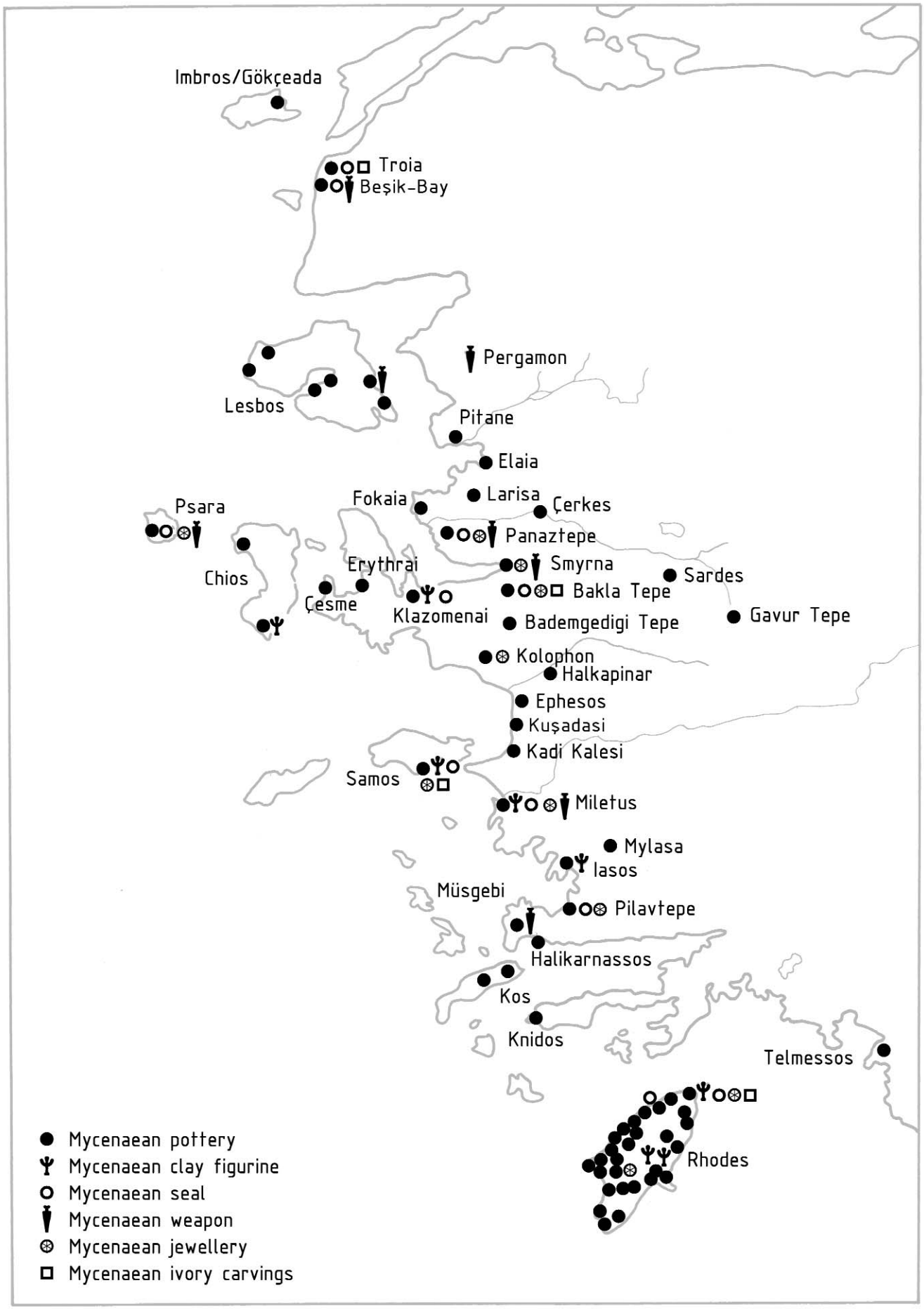

Figure 36 Distribution of Mycenaean pottery and other artefacts of Mycenaean type in the eastern Aegean

pottery,[397] and the ratios appear to be similar at Panaztepe, Klazomenai-Limantepe and Ephesos/Selçuk. Of the island sites, the few pieces of Mycenaean pottery at Thermi and Antissa on Lesbos are outnumbered by the local red and grey wares.[398] The same appears to apply to the Mycenaean pottery at Emporio on Chios before the LH IIIC settlement of Mycenaean character[399] and at Imbros/Gökçeada.

Thus in the 14th and 13th centuries BC the Mykale/Samson Dağ formed the border between a smaller zone of actual Mycenaean coastal settlements and colonies to the south and a larger zone of indigenous coastal settlements and anchorages to the north which had commercial links to the Mycenaean world[400] and in some of which probably community colonies of Mycenaean merchants existed. Archontiki on Psara with its almost entirely Mycenaean grave goods[401] appears to form an exception and possibly was a Mycenaean trader settlement. Some of the sites mentioned were – like Miletus – favourably situated as regards transport facilities. From Panaztepe, situated on an island or a peninsula,[402] the valley of the river Hermos leading into the interior could be reached. Troy was situated next to the difficult entrance from the Aegean to the Dardanelles and the Black Sea[403] and at the cross-roads from Asia Minor to the Balkans. There is some evidence that the west coast of Asia Minor was integrated in the international sea-routes of the Late Bronze Age. This includes the possible mention of Troy in the list of Aegean place names in the mortuary temple of Amenophis III in Thebes West[404] and the finds of two Egyptian scarabs, one of them with the name of Amenophis III, in the cemetery of Panaztepe,[405] as well as the fragments of Canaanite jars and ostrich eggs at Troy VI.[406] More than 100 Canaanite jars containing a ton of terebinth resin and several ostrich eggs were found in the shipwreck of Uluburun, which sunk on its way from the east to the Aegean and the main cargo of which consisted of ten tons of copper and 1 ton of tin.[407]

The phenomenon of the mixture of local and Mycenaean features on the west coast of Asia Minor has recently been explained by P.A. Mountjoy in her model of the 'East Aegean – West Anatolian Interface in the Late Bronze Age'.[408] She notes the differences in intensity of Mycenaean influence between the areas to the south and to the north of the Mykale/Samsun Dağ, but denies any immigration from the Mycenaean Greek mainland and explains these differences as differing intensities of the acculturation of the indigenous populations. The only reason she offers for the fact that the Mycenaean elements are much stronger to the south, in her 'Lower Interface', than further to the north, in her 'Central Interface' and 'Upper Interface', is: 'It could be that the Southern Interface absorbed the Mycenaean culture more easily since it had already been exposed to much Minoan influence'. As discussed above, the almost exclusively Mycenaean character of Miletus V–VI and of Müsgebi, above all in the domestic pottery, religion and burial customs, provides evidence for actual Mycenaean presence. Possible subtle differences between the chamber tomb burials in the 'Lower Interface' and in the Argolid do not argue against the presence of Mycenaean settlers.[409] There are also differences between the chamber tomb burials in different regions of the Greek mainland and even within single regions.[410] M. Benzi has convincingly argued that the south-eastern Aegean is too far from the Greek mainland to explain the occurrence of the chamber tombs by cultural influence, especially in view of the fact that no chamber tombs of this time are known from the Cyclades.[411]

The first Mycenaean settlers of the south-eastern Aegean probably left the Greek Mainland in response to 'untoward events', as H.W. Catling calls the destruction of a number of mansions and seats of principalities of early Mycenaean Greece in LH IIIA:1. These reflect conflicts between competing early Mycenaean chiefdoms and are followed by the foundation of the palaces and the emergence of a stricter hierarchical order reflected in changes in the burial customs.[412] With M. Benzi I can imagine 'that a number of displaced aristocrats (and their households) set sail to the Aegean in order to try their fortune there at the expense of the local communities, which had not yet fully recovered from the catastrophes at the end of LM IB'.[413] These aristocrats – at least those who landed on Rhodes – were well equipped with weapons.[414] The next phase, LH IIIA:2, sees a dramatic increase in the number of Mycenaean sites as well as in the quantities of Mycenaean pottery found in the south-eastern Aegean.[415] This second wave of Mycenaean expansion may well have been connected with one or more of the newly installed Mycenaean palace centres, just as the first Minoan expansion into the south-eastern Aegean in the early Middle Bronze Age had been connected with the then newly installed Cretan Old Palaces.

3. The evidence of the Mycenaean and Hittite texts compared to the archaeological evidence

Late Bronze Age Miletus emerges from the twilight of prehistory since it is mentioned in the Mycenaean and in the Hittite texts. On Linear B tablets from the so-called Palace of Nestor at Pylos in Messenia, we find women called *mi-ra-ti-ja* = woman from Miletus.[416] These women were working in the textile industry, as, too, were women from other sites on the east coast of the Aegean and from eastern Aegean islands: Knidos, Halikarnassos?, Lydia?, Chios? and Lemnos.[417] These have been considered to be slaves acquired on the slave market at Miletus and elsewhere in the east Aegean.[418] A man from Miletus (*mi-ra-ti-jo*) appears on the Linear B tablets most recently found at Thebes in Boeotia.[419] He is involved in sacrifices and had an important function at the Theban court.[420]

As to the Hittite sources, the Hittite New Kingdom was established in central Anatolia towards the end of the 15th century BC.[421] It soon started to expand in all directions, including to the west, where it several times came into conflict with Ahhiyawa and Millawanda, the latter settled by subjects of the king of Ahhiyawa.[422] Ever since E.O. Forrer argued in 1924 that Ahhiyawa of the Hittite texts was to be equated with the Homeric Achaeans, and consequently with the Mycenaean Greeks,[423] there has been much controversial debate about the identity and locations of Ahhiyawa and Millawanda.[424] At the very beginning the scholarly dispute was so severe that attacks by F. Sommer and others prevented an academic career for Forrer in Germany.[425]

What do the Hittite cuneiform archives of Hattuša tell us about Ahhiyawa and Millawanda?[426] There is some evidence that Ahhiyawa was somehow involved in the war which Great King Tudhaliya I (*c.* 1420–1400 BC)[427] fought against the so-called Assuwa Confederacy,[428] probably a federal country,[429] situated to the north of Arzawa which had been conquered by Tudhaliya just before.[430] The mention of the land of Ahhiyawa in an unfortunately very fragmentary letter[431] written by a Hittite Great King of the 14th or 13th century BC,[432] possibly to a king of Ahhiyawa, but referring to the earlier Assuwa war, since

Tud(haliya) and the king of Assuwa are mentioned, appears to indicate that Assuwa and Ahhiyawa were associated in some manner, possibly militarily, in the time of the reign of Tudhaliya I.[433] In the so-called Indictment of Madduwata, written by Arnuwanda I (*c.* 1400–1375 BC) to Madduwata, a renegade Hittite vassal in western Anatolia, we read about the aggressive activities in western Anatolia of Attarasiya, the man of Ahhiya (= Ahhiyawa), who had military resources in south-western Anatolia and fought a battle against the Hittites with a hundred chariots.[434]

The next time we read in the Hittite sources about Ahhiyawan political and military activities in western Anatolia is in the annals of Mursili II (*c.* 1318–1290 BC). In the third year of his reign, when Arzawa, Ahhiyawa and Millawanda formed an alliance against Hatti, Mursili sent an army against Millawanda, which conquered it.[435] In the same year Mursili himself conquered Arzawa and its capital Apasa.[436] King Uhhaziti of Arzawa escaped over sea to islands most probably belonging to the king of Ahhiyawa.[437] The population of Apasa scattered in flight: one group fled to the steep rocky peninsula Arinnanda.[438]

Ahhiyawa and Millawanda are next mentioned in connection with Piyamaradu, a renegade Hittite vassal (most probably the grandson of king Uhhaziti of Arzawa)[439] and one of the most provocative of the Hittites' enemies who for several decades caused much trouble to the Hittites and their vassals in western Asia Minor.[440] As we know from the so-called Tawagalawa Letter, written by Hattusili III (*c.* 1265–1240, now renumbered Hattusili II by F. Starke[441]) to a king of Ahhiyawa,[442] Piyaramadu was a protégé of the king of Ahhiyawa and conducted all his activities from Millawanda which must have been again under the control of the Ahhiyawan king. In the Tawagalawa letter Hattusili III/II addressed the king of Ahhiyawa 'My Brother, Great King, my equal'.[443]

The last mention of Ahhiyawan involvement in western Asia Minor is on a tablet of the time of Tudhaliya IV (*c.* 1240–1215 BC, now renumbered by Starke Tudhaliya III[444]).[445] The king of Ahhiyawa is mentioned in connection with the Seha River Land and Arzawa. According to the reading suggested by D.F. Easton and H.G. Güterbock, Tarnuharadu, the king of the Seha River Land, when rebelling against Hatti, relied on the king of Ahhiyawa.[446] The expected Ahhiyawan support either did not come or was insufficient, for Tudhaliya managed to suppress the rebellion and to deport Tarnuharadu and with him many prisoners.

The last mention of Millawanda is on a fragmentary tablet commonly known as the Millawata Letter written by Tudhaliya IV/III.[447] The addressee, a Hittite vassal in western Asia Minor addressed 'My Son' by Tudhaliya, is not named in the preserved part of the letter. It is controversial among scholars if the addressee of the letter was residing at Millawanda,[448] the Seha River Land,[449] or Mira.[450] If the addressee of the letter was the vassal king of Millawanda,[451] the letter reflects the supersession of Ahhiyawan influence on Millawanda and the establishment of a pro-Hittite regime.[452] According to T.R. Bryce the overthrow at Millawanda marked the end of Ahhiyawan influence and authority in western Asia Minor. This could be the reason why the king of Ahhiyawa, some time earlier explicitly acknowledged by Hattusili III/II as Great King and his equal, was erased in the treaty between Tudhaliya IV and Sausgamuwa, ruler of Amurru (Syria), from the list of the kings which Tudhaliya IV/III regarded as of equal status with himself.[453] According to Bryce, the king of Ahhiyawa, 'once excluded from the regions with which the Hittites were directly involved, … ceased to be relevant to Hittite concerns'.[454]

The countries and powers mentioned above, Arzawa, the Seha River Land, Millawanda, and Ahhiyawa, are clearly situated or active in western Asia Minor, but where should we put them on the map? The locations of all these countries have long been a subject of considerable dispute and there have been almost as many alternative maps of the political geography of western Asia Minor as there have been scholars who discussed the problem.[455] In 1977 J. Mellaart spoke ironically of 'the guessing game known as Hittite geography',[456] to which, however, he contributed very actively.[457] Recent finds of new inscriptions have now produced a rather clearer picture of the political geography of Late Bronze Age western Asia Minor, as independent studies by different scholars have demonstrated (map **Fig. 37**).[458] Of great importance is the reading of the long-known but until recently illegible inscription of rock relief A at the Karabel pass by J.D. Hawkins.[459] He has identified 'Tarkasnawa, king of Mira' as author of this inscription. Until the conquest by Mursili II in the late 14th century BC, Mira formed part of Greater Arzawa. Mursili split up Arzawa into a series of small vassal kingdoms, one of which was Mira, now including Arzawa proper,[460] referred to by scholars as Arzawa Minor to distinguish it from the other parts of the Arzawa complex.[461] The position of the reliefs and inscriptions at the Karabel pass[462] indicate that it marked a border, most probably the northern border of Mira/Arzawa Minor.[463] This is now confirmed by the rock inscription of Suratkaya which demonstrates that Mira in the south extended to the Latmos Mountains.[464] Thus the identification of Abasa, the capital of Arzawa, with Ephesos – as first suggested in 1959 by J. Garstang and O.R. Gurney[465] – gains great probability, especially when considering the impressive Late Bronze Age fortification presently coming to light on the acropolis of Ayasuluk.[466] Also likely is the identification of the rocky peninsula Arinannda, place of refuge for the people of Apasa during the attack by Mursili II, with the Mykale/Samsun Dağ.[467]

According to the Hittite sources, the Seha River Land was situated to the north of Arzawa Minor/Mira.[468] Thus it can no longer be located in the Maeander/Büyük Menderes valley as advocated earlier,[469] but must have been situated to the north of the Karabel pass. Therefore the Seha River was either the Hermos/Gediz or the Kaikos/Bakir.[470] With F. Starke and J.D. Hawkins I think that the Seha River Land comprised both river valleys.[471] Since in a letter by Manabatarhunta, king of the Seha River Land, importance is given to an attack on Lazpa,[472] identified with the island of Lesbos,[473] the Seha River Land was probably adjacent to Lesbos which is situated opposite the mouth of the Kaikos/Bakir. In the same letter an attack on Wilusa by Hittite troops is mentioned. This has been taken as evidence that Wilusa was able to stay out of the conflict between Hatti and Arzawa and thus must have been situated in some distance from Arzawa but close to the Seha River Land.[474] Therefore Wilusa most probably was the Troad, as a series of scholars have long suggested.[475] Thus all the equivalents Lukka – Lycia, Apasa – Ephesos, Lazpa – Lesbos, Wilusa – *Wilion are no coincidental 'kling-klang etymologies', as ironically named by Mellaart.[476] Rather the toponyms of the first millennium BC reflect their Late Bronze Age predecessors.

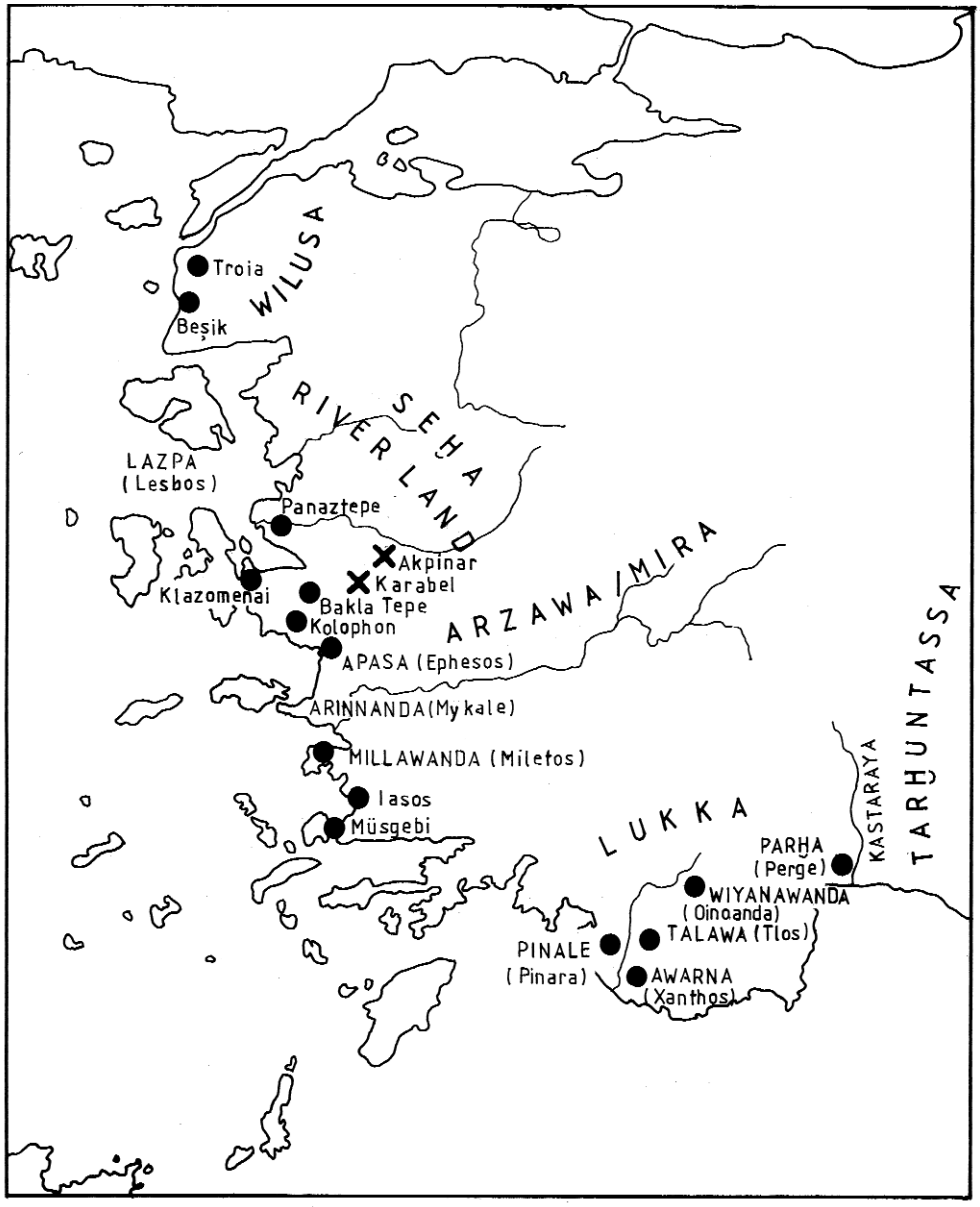

Figure 37 Western Asia Minor: Political geography in the 13th century BC (Hittite/Luwian names in capitals) and important Late Bronze Age sites with evidence for contacts with the Mycenaean world

But what about Ahhiyawa and Millawanda? Definitely no space remains in western Asia Minor for the Great Kingdom of Ahhiyawa.[477] Further evidence for the location of Ahhyiawa outside of western Asia Minor is formed by the fact that Hittite troops never entered it[478] and by the unique role of Ahhiyawa in the Hittite texts discussed by M. Marazzi.[479] Ahhiyawa is constantly active in connection with the states in western Asia Minor, but in contrast to these, any information about the geography of Ahhiyawa (except the mention of the islands belonging to Ahhiyawa) and any characterisation of its political and social structure (except for the reference to the king of Ahhiyawa) is missing. To the Hittites Ahhiyawa was a distant and rather unknown country, apparently situated overseas.

Elsewhere I have discussed all other suggestions so far made for the location of the centre of Ahhiyawa and have ruled them out one by one.[480] Only mainland Greece remained, and this identification was already favoured by a series of distinguished scholars, starting with Forrer.[481] The linguistic arguments put forward against the equation of Ahhiyawa and the Achaeans by the opponents of Forrer's equation Ahhiyawa=Achaeans[482] have been weakened or refuted.[483] A prominent person from Ahhiyawa, Tawagalawa, who is mentioned in the so-called Tawagalawa Letter and who was a brother of the king of Ahhiyawa,[484] bears a name which is foreign to Asia Minor[485] and which Forrer has connected with the Greek name Eteokles.[486] This has been confirmed after the Decipherment of Linear B. On Pylos tablets An 654 and Aq 46 appears a patronymic adjective *e-te-wo-ke-re-we-i-jo*[487] = son of *Etewoklewas. According to N. Oettinger, there are only a few equivalents of names in antiquity which are as certain as Tawakalawas-**Etewoklewas*.[488] Other names of people from Ahhiyawa can possibly also be explained as Greek.[489]

There are two interesting archaeological finds from Hattuša connected with Mycenaean warfare and dating to the period in which Ahhiyawan military involvement started in western Anatolia in the late 15th and early 14th centuries BC, possibly in the Assuwa war, certainly with the activities of Attarasiya. In 1991 a bronze longsword came to light near the Lion Gate at Hattuša.[490] It bears the Akkadian inscription:[491] 'As Tuthaliya the Great King shattered the Assuwa-Country he dedicated these swords to the Storm-God, his Lord'. This inscription indicates that the sword was part of Tuthaliya's I booty from the Assuwa campaign.[492] As suggested by L. Vagnetti, it is possibly an advanced variation of a traditional Mycenaean Type B sword.[493] It may have been manufactured in a local Mycenaean workshop on the eastern Aegean islands or on the west coast of Asia Minor.[494] On the

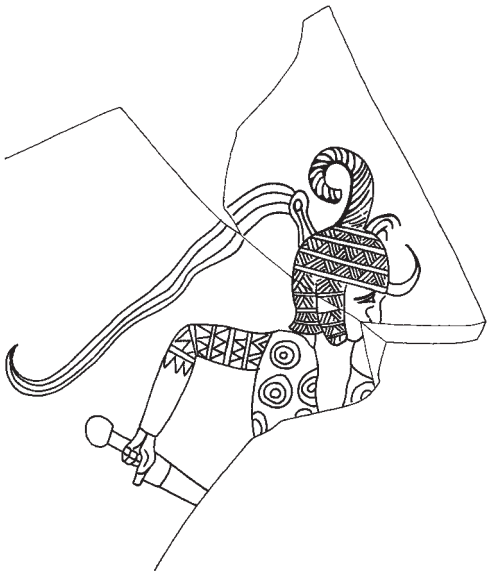

Figure 38 Drawing of fragments of a clay bowl from Hattuša with incised representation of an Aegean warrior, *c.* 1400 BC (after Bittel)

Figure 39 Miletus VI: Bronze swords from Değirmentepe Mycenaean chamber tomb 7

fragment of a bowl from a late 15th to early 14th century BC context at Hattuša the representation of an apparently non-Hittite warrior is incised (**Fig. 38**). The zoning, plume, horn, and flowing ribbons of his helmet are all reminiscent of representations of Aegean helmets.[495] Thus the warrior represented on the bowl appears to be Mycenaean, possibly one of the emigrant Mycenaean 'displaced aristocrats' of the LH IIIA:1 period proposed by Benzi, of which Attarasiya, the man (not king)[496] from Ahhiya, may have been a prominent example.[497]

But what about the character of the Mycenaean presence in the south-eastern Aegean in the LH IIIA:2 and LH IIIB periods? In 1988 C. Mee did not 'believe that a mainland Mycenaean kingdom could have exercised effective political control over settlements scattered across the Eastern Aegean'.[498] In 1998 he admitted, however, some mainland control and saw 'Ahhiyawa as a maritime confederacy which was led by one of the mainland Mycenaean states, such as Mycenae'.[499] Like Mee I do not believe in a unified centralised Mycenaean state comprising mainland Greece, the islands and the settlements in western Anatolia. The Hittite empire was, however, itself not a centralised state but a system of partly semi-independent vassals and protectorates.[500] Where was the centre of Ahhiyawa? Some scholars – among them myself – have argued that it may have been at Mycenae.[501] G.A. Lehmann, however, has pointed to the fact that the ethnic name Achaioi and the toponym Achaia are not attested in the Argolid but in eastern central Greece (and on Rhodes).[502] Further he has referred to the group of Mesopotamian cylinder seals found in the Mycenaean palace of Thebes in Boeotia and to E. Porada's theory, according to which this find may have been connected with an attempt by the Assyrian king Tukulti-Ninurta I to make common cause with the king of Thebes against the Hittite embargo of the Levantine coast by sending a mine of lapis lazuli in carved and in unworked cylinder seals.[503] In connection with this embargo in the Sausgamuwa treaty ships of Ahhiyawa are mentioned which king Sausgamuwa of Amurru (Syria) should send away.[504] Porada's theory has found opponents,[505] but the facts that the geographical information found on the new Linear B tablets from Thebes demonstrate that the territory controlled by the Theban palace was larger than the territories controlled by the palaces of Pylos, Mycenae and Tiryns and that Thebes must have played a leading role in the Mycenaean world[506] gives some probability to Porada's theory and thus perhaps the identification of Thebes as the centre of Ahhiyawa, *pace* the recent doubts of R. Hope Simpson.[507] The man from Miletus with his important role at the court of Thebes has been already mentioned.[508]

As to the geographical position of Millawanda, five locations have been proposed by different scholars.[509] Three of them, those at the southern coast of the Sea of Marmara, in Milyas (Lycia) and on the Cilician coast, have already been refuted by me in 1998.[510] At that time I still accepted the location at the mouth of the Hermos/Gediz river[511] as a possibility, although I considered with Güterbock[512] the Hermos/Gediz valley the best candidate for the location of the Seha River Land. After Hawkins' reading of the rock relief A at the Karabal pass has confirmed this, Millawanda can definitely not have been situated at the mouth of the Hermos/Gediz river.

Thus of all locations of Millawanda hitherto proposed, that at Miletus alone remains. Either Miletus was Millawanda, or we do not yet know it. As to the name Millawanda, the derivation from an original Greek form Milvatos (with digamma) suggested by G.L. Huxley[513] has been refuted by A. Heubeck[514] and G. Steiner.[515] It appears, however, quite possible to me that the Luwians had changed the Mycenaean Greek name Millatos as reconstructed by Heubeck[516] by affixing the typical Luwian suffix *-wanda/-wanta*[517] to the stem *Milla-*, thus assimilating the name to their own accustomed patterns, a phenomenon known also from more recent adaptations of foreign toponyms.[518]

The textual evidence for the history of Millawanda matches rather well the archaeological evidence from Miletus. According to the Hittite sources, Millawanda was inhabited by subjects of the king of Ahhiyawa, and, as we have seen, according to the archaeological evidence the inhabitants of Miletus during periods V and VI were mainly Mycenaeans. In the third year of his reign, *c.* 1316 BC, Mursili II sent an army against Millawanda which conquered and destroyed it. Miletus V ended in a disastrous fire-destruction. The Mycenaean pottery in the destruction level is to be dated to LH IIIA:2, some of it late in the

Figure 40 Miletus VI: Fragment of locally produced LH IIIB-C krater with representation of a Hittite conical crown

Figure 41 Sealing of Tudhaliya IV/III with representation of a Hittite god with conical crown

phase, which ended in the late 14th century to around 1300 BC,[519] which corresponds well to the historical date of the destruction of Millawanda by the troops of Mursili II *c.* 1316 BC.

As discussed above, the Millawata Letter probably shows that Millawanda came under Hittite control in the second half of the 13th century BC. At that time we find signs of Hittite influence at Miletus. The fortification wall of Miletus VI (plan **Colour Pl. 1**) with its rectangular bastions spaced at regular intervals and its probable casemate system is an un-Mycenaean, Anatolian type.[520]

The pottery, the jewellery and most of the bronzes from the Mycenaean chamber tombs at the Değirmentepe are Mycenaean. Some bronzes, however, are of oriental character. Of these, a pair of horse bits for chariot-horses of K. Bittel's type A 2[521] and J.H. Crouwel's type 4[522] does not necessarily indicate Hittite influence or presence, since other types of horse bits of oriental origin have been found at Mycenae and Thebes.[523] There are, however, some swords of a type completely unknown in the Aegean (**Fig. 39** second to fourth from left). These swords have a rod tang and – if preserved – a grip with two curved flanges at top and bottom. The hilt is crescent-shaped and has a socket-like extension for holding the blade. Swords of this type are known from Tell Atchana/Alalakh,[524] Ras Shamra/Ugarit[525] and Tell es-Sa'idieh (Jordan).[526] Two further examples come from Egypt, without more precise provenance.[527] The crescent-shaped hilt with a socket-like extension of the sword type in question has recently been found in the excavation of the upper city of Hattuša.[528] Thus the non-Mycenaean swords from the Değirmentepe cemetery are of oriental, probably Hittite origin.

On the fragment of a Mycenaean krater of local production to be dated around 1200 BC (**Fig. 40**), a bird's head faces left toward a pointed conical object with symmetrical horns curling up along the sides.[529] This conical object, interpreted by the excavator as a cult stand,[530] is in fact – as several scholars have recognised[531] – a horned conical crown like those worn by Hittite gods (**Fig. 41**), and from the middle of the 13th century BC also by Hittite rulers.[532] No interpretation has as yet been offered for the bird's head at the right edge of the krater fragment. I think that it may have been part of the imitation of an inscription in Luwian/Hittite hieroglyphs. On the Karabal relief the bird-sign of a hieroglyphic inscription is in a similar position in front of the crown as on our fragment.[533] In any case the representation of a Hittite god or ruler on a locally produced Mycenaean krater forms a strong sign of Hittite influence.

4. The end of the Mycenaean presence in western Asia Minor and the 'Ionian migration'

We have no information about how the change of power at Miletus happened. The fact that the king of Ahhiyawa did not help king Tarhunnaradu of the Seha River Land in his uprising against Tudhaliya IV (III), although Tarhunnaradu had trusted in his support,[534] appears to indicate a weakening of Ahhiyawa which hindered its intervention and finally caused the loss of Millawanda. Archaeological evidence confirms this weakening of Ahhiyawa. The Mycenaean palace system, which had its zenith in the first half of the 13th century BC, passed through a crisis in the middle of the century. A series of palace centres and settlements suffered destructions,[535] among them Thebes,[536] Mycenae[537] and Tiryns,[538] probably also Pylos.[539] The cause of these destructions is under discussion. An earthquake[540] and warlike destructions[541] have been suggested. The indications do not unequivocally point to either of the two possibilities.[542] The evidence for a period of destabilisation and uncertainty in the Greek mainland following these events is, however, clear. The reaction of the palace administrations of Pylos, Mycenae and possibly Tiryns to this situation is reflected in the now more restricted and controlled entrances to the palaces as well as in the transfer of storage facilities and workshops into or very near to the palaces.[543] These problems probably absorbed all forces of Ahhiyawa and prevented all further engagement in western Asia Minor. Only a few decades after the Hittites had taken possession of Millawanda, their empire collapsed due to different factors, an inner crisis and attacks from outside.[544] At almost the same time the Mycenaean palace system perished.[545]

About 1100 or 1060/40 BC the Bronze Age settlement of Miletus was finally destroyed.[546] We do not know by whom or why. We also do not know what happened in Miletus VI between *c.* 1200 BC and the final destruction.[547] We are not certain if there was hiatus after the destruction and if so, for how long.[548] There are some fragments of pottery of the Submycenaean period (*c.* 1060/40–1040/00 BC) found above the ruins of the fortification wall.[549] This Submycenaean and the following Protogeometric pottery show close connections to Attica.[550] Therefore, V.R.d.'A. Desborough thought that the re-settlement of Miletus happened from Attica[551] and saw in the finds at Miletus a confirmation of the

tradition of the Ionian migration,[552] as did also H. Mühlestein and F. Schachermeyr, who pointed to the foundation myth according to which Ionian Miletus was founded by Neileos/Neleus, son of the Attic king Kodros.[553] Recently scholars have doubted that there is a historical reality behind the tradition of the Ionian migration. They have argued that it 'is a product of the needs of Archaic Greece and not of Dark Age history'[554] and thought that 'rather than treating these various foundation myths as reminiscences of genuine population movements, it is perhaps preferable to view them as active attempts on the part of the Greek cities of Asia Minor to anchor their origins in the deeper mythical past of mainland Greece'.[555] As discussed above, Arzawa, Mira and the Seha River Land, all countries with populations speaking Luwian, were situated north of Miletus in the Late Bronze Age, in the area that became Greek-speaking Ionia. I see no other cause for this change in language than the immigration of Greek speaking groups to the west coast of Asia Minor.[556]

Most of the decorated protogeometric pottery from Miletus and Ephesos is of local production.[557] This provides evidence for the presence of Greek potters and vase painters in Ionia. Unfortunately, almost no information has been published on the find contexts of protogeometric pottery in Ionia. An early protogeometric deposit from the Artemision of Ephesos now forms an exception.[558] Thirty-five percent of the pottery fragments come from handmade one-handled cooking pots (chytrai).[559] As discussed above in regard to the Minoan and Mycenaean presence at Miletus, at other sites on the south-west coast of Asia Minor and in the south-east Aegean islands, coarse domestic ware, which certainly was no trade item, forms important evidence for immigration. Like other folk traditions, those concerning the Ionian Migration were certainly distorted to fit the interests of later generations.[560] They served as a medium for finding identities, as instruments of political argumentation,[561] and as 'intentional history'.[562] B. Smarczyk is certainly correct in stating that the myth of the foundation of Greek Ionia as a single enterprise of colonization, lead by a coherent group of Kodristic Oikistes or by Neleus or Ion, is unhistorical.[563] The evidence discussed above shows, however, that the tradition of the Ionian migration, with Athens playing a special role, is not complete fiction, but has a historical core.[564] The Greek immigrants to western Asia Minor at the turn of the 2nd to the 1st millennium BC did not enter unknown territory. The Aegean Sea had connected Greece and Asia Minor from the 4th millennium BC onwards, and Miletus had from the beginning been an important point of intersection.

Acknowledgements

I would like to thank D. Williams and L. Schofield for the invitation to take part in this stimulating colloquium. To A. Villing I am grateful for the careful editorship.

Notes

1 For Minos see Poland, 'Minos', *RE* XV 2 (1932), 1890–1927. For the names 'Minoan' and 'Minoans' used by Evans see J.A. MacGillivray, *Minotaur. Sir Arthur Evans and the Archaeology of the Minoan Myth* (London, 2000), 134–5.

2 *FHG* 70 Fr. 127 = Test. 79; F. Prinz, *Gründungsmythen und Sagenchronologie* (Munich, 1979), 107–9, 399 Test. 79. For Ephoros see Schwartz, 'Ephoros', *RE* VI (1909), 1–16; for Sarpedon see Zwicker, 'Sarpedon', *RE* IIA1 (1921), 41–2.

3 Prinz (n. 2), 107.

4 Prinz (n. 2), 109–10; V.B. Gorman, *Miletos: The Ornament of Ionia. A History of the City to 400 B.C.E.* (Ann Arbor, 2001), 14–5.

5 As to the identification of the Lelegoi and Carians, see Gorman (n. 4), 15–7.

6 F. Schachermeyr, *Die minoische Kultur des alten Kreta* (Stuttgart, 1964), 108, 111; id., *Die griechische Rückerinnerung im Lichte neuer Forschungen* (Vienna, 1983), 302–3; id., *Griechische Frühgeschichte. Ein Versuch, frühe Geschichte wenigstens in Umrissen verständlich zu machen* (Vienna, 1984), 79; G.L. Huxley, *Minoans in Greek Sources* (Belfast, 1968), 8, 13.

7 Prinz (n. 2), 108.

8 Ibid., 111; J. Cobet, 'Die Mauern sind die Stadt: Zur Stadtbefestigung des antiken Milet', *AA* (1997), 253–4.

9 Cf. the summary of the results of these excavations by C. Mee, 'Aegean Trade and Settlement in Anatolia in the Second Millennium B.C.', *Anat. Stud.* 28 (1978), 133–7, with bibliography, and the report on the 1968 season which was published after Mee's article: W. Schiering, 'Milet: Eine Erweiterung der Grabung östlich des Athenatempels', *Ist. Mitt.* 29 (1979), 77–108.

10 As to the dates of the revised high chronology, see S. W. Manning, *The Absolute Chronology of the Aegean Early Bronze Age* (Sheffield, 1995), 217–29, table on p. 217; id., *A Test of Time: The Volcano of Thera and the Chronology and History of the Aegean and East Mediterranean in the Mid Second Millennium BC* (Oxford, 1999); R.A. Housley, S.W. Manning, G. Cadogan, R.E. Jones, and R.E.M. Hedges, 'Radiocarbon, Calibration, and the Chronology of the Late Minoan IB Phase', *JAS* 26 (1999), 159–71 (new evidence suggesting the close of the LM IB phase *c.* 1525–1490 BC). For the Cretan Old Place period even higher dates have been suggested by J.A. MacGillivray, *Knossos Pottery Groups of the Old Palace Period* (British School at Athens Studies 5; London, 1998), 106–9, fig. 3.3 on p. 9. For the alternative dates of the low chronology see P.M. Warren and V. Hankey, *Aegean Bronze Age Chronology* (Bristol, 1989), 121–69, table 3.1 on p. 169, and P.M. Warren, 'The Minoan Civilisation of Crete and the Volcano of Thera', *Journal of the Ancient Chronology Forum* 4 (1990–91), 29–39.

11 The dates of the end of LH IIIA:2, *c.* 1360–1325 proposed by Manning and *c.* 1340/30 proposed by Warren and Hankey are too high. New evidence confirms the traditional date of the change from LH IIIA:2 to LH IIIB:1 *c.* 1300 BC as first stated by A. Furumark, *The Chronology of Mycenaean Pottery* (Stockholm, 1941), 14–115 – see M.H. Wiener, 'The Absolute Chronology of Late Helladic IIIA2 Revisited', *BSA* 98 (2003), 239–50.

12 It is not yet clear if the third building period ended in LH IIIC Middle (*c.* 1100 BC) or in LH IIIC Late (*c.* 1060/40 BC); see P.A. Mountjoy, *Mycenaean Pottery: An Introduction* (Oxford, 1993), 175–6 (LH IIIC Middle); F. Schachermeyr, *Die Ägäische Frühzeit 4: Griechenland im Zeitalter der Wanderungen* (Mykenische Studien 8; Vienna, 1980), 338–9 (LH IIIC Late).

13 See Manning 1995 (n. 10), 154–5; J. Maran, *Kulturwandel auf dem griechischen Festland und den Kykladen im späten 3. Jahrtausend v.Chr.* (Bonn, 1998), 157.

14 W. Voigtländer, 'Funde aus der Insula westlich des Buleuterion in Milet', *Ist. Mitt.* 32 (1982), 30–41.

15 H. Parzinger, 'Zur frühesten Besiedlung Milets', *Ist. Mitt.* 39 (1989), 416–24.

16 Voigtländer (n. 14), 35; Parzinger (n. 15), 429.

17 Cf. Parzinger (n. 15), 429.

18 According to the reports, the earliest architecture excavated in the settlement in the area of the Temple of Athena was contemporary with the Cretan New Palace period, as also was most of the pottery. P. Warren, in: R. Hägg and N. Marinatos (eds), *The Minoan Thalassocracy, Myth and Reality: Proceedings of the Third International Symposium at the Swedish Institute in Athens, 31 May – 5 June, 1982* (Stockholm, 1984), 189, pointed to a handle fragment with the appliqué of a shell, *Ist. Mitt.* 9–10 (1959–60), pl. 7.1 lower left, which he dated to MM II. This early date is, however, not certain, since appliqués of this type occurred as late as LM IB – see, for instance, the LM IB jug from Poros published by N. Dimopoulou, 'The Marine Style Ewer from Poros', in: Ph.P. Betancourt, V. Karageorghis, R. Laffineur and W.-D. Niemeier (eds), *Meletemata: Studies in Aegean Archaeology Presented to Malcolm H Wiener as he enters his 65th Year* (Aegaeum 20; Liège and Austin, 1999), 217–25, pls XLIV–XLVIII.

19 As thought by Schachermeyr 1964 (n. 6), 108, 111, 304; id. 1984 (n. 6), 79; Huxley (n. 6), 8. 13; S. Hood, *The Minoans: Crete in the Bronze Age* (London, 1971), 52; F. Matz, 'The Zenith of Minoan Civilization', in: *CAH* II.1 (3rd edn, 1973), 578; J.T. Hooker, *Mycenaean Greece* (London and Boston, 1976), 67; Mee (n. 9), 149; id., *Rhodes in the Bronze Age* (Warminster, 1982), 80; id., 'Anatolia and the Aegean in the Late

Bronze Age', in: E.H. Cline and D. Harris-Cline (eds), *The Aegean and the Orient in the Second Millennium: Proceedings of the 50th Anniversary Symposium, Cincinnati, 18–20 April 1997* (Aegaeum 18; Liège and Austin, 1998), 137; G. Cadogan, 'A Minoan Thalassocracy', in: Hägg and Marinatos (n. 18), 14; M. H. Wiener, 'Crete and the Cyclades in LM I: The Tale of the Conical Cups', ibid., 18; id., 'The Isles of Crete? The Minoan Thalassocracy Reconsidered', in: D.A. Hardy with Ch.G. Doumas, J.A. Sakellarakis and P.M. Warren (eds), *Thera and the Aegean World III: Proceedings of the Third International Congress, Santorini, Greece, 3–9 September 1989*, Vol. I, Archaeology (London, 1990), 147; W.-D. Niemeier, 'The End of the Minoan Thalassocracy', in: Hägg and Marinatos (n. 18), 207, 214; id., *Die Palaststilkeramik von Knossos* (Archäologische Forschungen 13; Berlin, 1985), 219, 226, 229; id., 'Creta, Egeo e Mediterraneo agli inizi del bronzo tardo', in: M. Marazzi, S. Tusa and L. Vagnetti (eds), *Traffici micenei nel Mediterraneo: Atti del Convegno di Palermo, 11–12 maggio e 3–6 dicembre 1984* (Taranto, 1986), 248; J.-C. Poursat, in: R. Treuil, P. Darcque, J.-C. Poursat and G. Touchais, *Les civilisations égéennes* (Paris, 1989), 235, 320; G. Touchais, ibid., 356.

20 As thought by W. Voigtländer, 'Teichiussa im zweiten Jahrtausend', in: W. Schiering (ed.), *Kolloquium zur Ägäischen Vorgeschichte, Mannheim, 20.–22.2.1986* (Schriften des Deutschen Archäologen-Verbandes 9; 1987), 135–6; E.M. Melas, 'The Dodecanese and W. Anatolia in Prehistory: Interrelationships, Ethnicity and Political Geography', *Anat. Stud.* 38 (1988), 114; ead., 'Acculturation and Social Mobility in the Minoan World', in: R. Laffineur and L. Basch (eds), *Thalassa, l'Égée prehistorique e la mèr: Actes de la troisième Rencontre égéenne internationale de l'Université de Liège, Calvi , Corse (23–25 avril 1990)* (Aegaeum 7; Liège, 1991), 181.

21 As stated by Mee (n. 9), 135, it is 'impossible to discern the process by which Miletus became Mycenaean rather than Minoan in culture'. The other excavated settlement sites in the Eastern Aegean have also provided little information for the Minoan-Mycenaean transition, see Mee 1982 (n. 19), 82–3; id., 'A Mycenaean Thalassocracy in the Eastern Aegean?', in: E.B. French and K.A. Wardle (eds), *Problems in Greek Prehistory: Papers presented at the Centenary Conference of the British School of Archaeology at Athens, Manchester, April 1986* (Bedminster and Bristol, 1988), 301–4.

22 As thought by A. Furumark, 'The Settlement at Ialysos and Aegean History c. 1550–1400 B.C.', *Op. Ath.* 6 (1950), 201–2; G.L. Huxley, *Achaeans and Hittites* (Oxford, 1960), 11–5; J.M. Cook, *The Greeks in Ionia and the East* (London, 1962), 18; V.R.d'A. Desborough, *The Last Mycenaens and their Successors* (Oxford, 1964), 161–3; E.T. Vermeule, *Greece in the Bronze Age* (Chicago, 1964), 116, 152, 157, 183, 272, 275; C.W. Blegen, 'The Expansion of Mycenaean Civilization', in: *CAH* II.2 (3rd edn, 1973), 166, 184; R.D. Barnett, 'The Sea Peoples', ibid., 362; Hooker (n. 19), 115; Mee (n. 9), 149; id. 1982 (n. 19), 82–3, 89; id. 1998 (n. 19), 139–141; Schachermeyr 1983 (n. 6), 40; id. 1984 (n. 6), 102, 104; H. van Effenterre, *Les Égéens, aux origins de la Grèce* (Paris, 1986), 153; P. Darcque, in: Treuil *et al*. (n. 19), 441–2.

23 As thought by Voigtländer (n. 20), 135–6; Melas 1988 (n. 20), 114, 118; id. 1991 (n. 20), 181.

24 On the discussions about Ahhiyawa and Millawanda, see W.-D. Niemeier, 'The Mycenaeans in Western Anatolia and the Problem of the Origins of the Sea Peoples', in: S. Gitin, A. Mazar, and E. Stern (eds), *Mediterranean Peoples in Transition, Thirteenth to Early Tenth Centuries BCE* (Jerusalem, 1998), 19–25, id., 'Westkleinasien und Ägäis von den Anfängen bis zur Ionischen Wanderung: Topographie, Geschichte und Beziehungen nach dem archäologischen Befund und den hethitischen Quellen', in: G. Bakir, J. Cobet, V. von Graeve, W.-D. Niemeier and K. Zimmermann (eds), *Das frühe Ionien, eine Bestandsaufnahme, Panionion, 26. September – 1. Oktober 1999* (Milesische Forschungen, forthcoming).

25 I am grateful to the Institute of Aegean Prehistory for financial support, to V. von Graeve, the director of the Miletus excavations, for the invitation to conduct the project as well as for his administrative and logistical support, and to all collaborators of our team.

26 Cf. P.J. Falsham, *Groundwater Pumping Techniques for Excavation* (The Institute of Field Archaeologists, Technical Paper No. 1; 1984).

27 As designated by Parzinger (n. 15), 428.

28 H. Brückner, 'Coastal Research and Geoarchaeology in the Mediterranean Region', in: D. Kelletat (ed.), *German Geographical Coastal Research: The Last Decade* (Tübingen, 1998), 251–3, fig. 6b.

29 B. Bay, *Geoarchäologie, anthropogene Bodenerosion und Deltavorbau im Büyük Menderes Delta (SW-Türkei)* (Herdecke, 1998), 34–48, figs 16, 20-21.

30 For similar domestic pits of the Late Chalcolithic period on the neighbouring island of Samos, see R.C.S. Felsch, *Samos II: Das Kastro Tigani, die spätneolithische und chalkolithische Siedlung* (Bonn, 1988), 31–40, pls 2–3, 5.2. As pointed out to me by A.E. Raymond, one of the domestic pits in the Early Bronze Age settlement at Elmalı-Karataş was divided by a wall of mudbrick: J. Warner, *Elmalı-Karataş II: The Early Bronze Age Village of Karataş* (Bryn Mawr, 1994), 169–70, pl. 73b.

31 The Late Chalcolithic of Asia Minor corresponds to the Late Neolithic of the Aegean. For these differences in terminology see A.A. Sampson, *He neolithike periodos sta Dodekanesa* (Athens, 1987), 116–20; E. Alram-Stern, *Die Ägäische Frühzeit, 2. Serie, Forschungsbericht 1975–1993, Vol. I: Das Neolithikum in Griechenland* (Vienna, 1996), 84. For the cultural group in question see Sampson, op.cit., 96–115; Parzinger (n. 15), 424–9; Alram-Stern, op.cit., 480-94.

32 Parzinger (n. 15), 431.

33 S. Lloyd and J. Mellaart, *Beycesultan I: The Chalcolithic and Early Bronze Age Levels* (London, 1962), 71–98, figs P.1–11; M.S. Joukowsky, *Prehistoric Aphrodisias* (Dubuque, 1986), 386 fig. 320; L. Thissen, 'New Insight in Balkan-Anatolian Connections in the Late Chalcolithic: Old Evidence from the Turkish Black Sea Littoral', *Anat. Stud.* 43 (1993), 222–5; P. Sotirakopoulou, 'Late Neolithic Pottery from Akrotiri on Thera: Its Relations and the Consequent Implications', in: Alram-Stern (n. 31), 581–95.

34 Alram Stern, (n.31), 592–5.

35 For this see Sampson (n. 31), 46–7, 133; id., *He neolithike katoikese sto Gyali tes Nisyrou* (Athens, 1988), 212, 217, 222.

36 Publication in preparation. For the quarries of Sta Nychia and Demenegaki on Melos, see R. Torrence, 'The Obsidian Quarries and their Use', in: C. Renfrew and M. Wagstaff (eds), *An Island Polity: The archaeology of exploitation in Melos* (Cambridge, 1982), 193–221. For the obsidian trade, see C. Renfrew, J.E. Dixon and J.R. Cann, 'Obsidian in the Aegean', *BSA* 60 (1965), 225–47; C. Renfrew, *The Emergence of Civilisation. The Cyclades and the Aegean in the Third Millennium B.C.* (London, 1972), 442–3, 449, 465; R. Torrence, *Production and Exchange of Stone Tools* (Cambridge, 1986).

37 M.J. Blackman, 'The Provenience of Obsidian Artefacts from Late Chalcolithic Levels at Aphrodisias', in: Joukowsky (n. 33), 279–85.

38 J.D. Muhly, *Copper and Tin* (New Haven, 1973), 199–208; A. Müller-Karpe, *Altanatolisches Metallhandwerk* (Neumünster, 1994), 15–28; Ü. Yalcin, 'Anfänge der Metallverwendung in Anatolien', in: Ü. Yalcin (ed.), *Anatolian Metal I* (Der Anschnitt Supp. 13; Bochum, 2000), 17–30.

39 J.E. Coleman, *Keos I: Kephala. A Late Neolithic Settlement and Cemetery* (Princeton, 1977), 108.

40 These figurines have been studied by A.E. Raymond. There are examples of the types Troy 2 B – see C.W. Blegen, J.L. Caskey, M. Rawson and J. Sperling, *Troy I: General Introduction, The First and Second Settlements* (Princeton, 1950), fig. 127; V. Milojcic, *Samos I: Die prähistorische Siedlung unter dem Heraion, Grabungen 1953 und 1955* (Bonn, 1961), 55 pl. 34.4 – and 2 G-H – see Blegen *et al*., op.cit., fig. 127; Lloyd and Mellaart (n. 33), 266 fig. F1.21 (Beycesultan); Joukowsky (n. 33), 213 type g fig. 231 (Aphrodisias); W. Lamb, 'Excavations at Kusura near Afyon Karahisar', *Archaeologia* 86 (1936), 50, 29 fig. 11.7 pl. 6.9b. On anthropomorphic figurines in the eastern Aegean see Ch. Marangou, *Eidolia: Figurines et miniatures du Néolithique Récent et du Bronze Ancien en Grèce* (Oxford, 1992), 65–91, 117–9; ead., 'Anthropomorphic and Zoomorphic Figurines of the Early Bronze Age in the North Aegean', in: Ch.G. Doumas and V. La Rosa (eds), *He Poliochne kai he proime epoche tou chalkou sto Boreio Agaio, Diethnes Synedriou, Athena, 22–25 Apriliou 1996* (Athens, 1997), 649–65.

41 Cf. C. Renfrew, 'The Development and Chronology of the Early Cycladic Figurines', *AJA* 73 (1969), 16–7, ill. 3 no. IV B, pl. 5.a-d; P. Getz-Gentle, *Personal Styles in Early Cycladic Sculpture* (Madison and London, 2001), 49–52, pls 42–4.

42 The head was found re-deposited on a MB stone packing. For the distribution of Cycladic marble figurines, see the maps in Renfrew 1972 (n. 36), 424 fig. 19.7, 453 fig. 20.5; P. Getz-Preziosi, *Sculptors of the Cyclades: Individual and Tradition in the Third Millennium B.C.* (Ann Arbor, 1987), 6 fig. 2. The only other known place on the mainland of Asia Minor where Cycladic marble figurines have been found is Knidos. In 1888, J. Th. Bent, 'Discoveries in Asia Minor', *JHS* 9 (1888), 82, reported that marble figurines of Cycladic type, among them that of a seated harp player, came from graves at Cape Krio. The whereabouts of these figurines are unknown.

43 R.L.N. Barber, 'Early Cycladic Marble Figurines: Some Thoughts on their Function', in: J.L. Fitton (ed.), *Cycladica: Studies in the Memory of N.P. Goulandris, Proceedings of the Seventh British Museum Classical Colloquium, June 1983* (London, 1984), 10-4; J.L. Davis, 'A Cycladic Figure in Chicago and the Non-Funeral Use of Cycladic Marble Figurines', ibid., 15–21; C. Renfrew, 'Speculations on the Use of Early Cycladic Sculpture', ibid., 24–30.

44 The Cycladic figurines found in the Phourni necropolis at Archanes in Crete have been convincingly interpreted by the excavators as evidence for the presence of Cycladic people – see I.A. Sakellarakis, 'Die Kykladen und Kreta', in: J. Thimme (ed.), *Kunst und Kultur der Kykladeninseln im 3. Jahrtausend v.Chr.* (Karlsruhe, 1976), 149–58; Y. and E. Sakellarakis, *Archanes: Minoan Crete in a New Light* (Athens, 1997), 339–49.

45 See n. 42.

46 P.E. Pecorella, *La cultura preistorica di Iasos in Caria* (Rome, 1984), 66–7 nos 64–6, fig. 10, pls 37.150, 39.138, 46.184, pp. 97–8. R.L.N. Barber, *The Cyclades in the Bronze Age* (London, 1987), 134, thinks that a number of Cycladic settlers lived in EB Iasos. However, the cist graves do not necessarily derive from Cycladic prototypes, since this grave type has a long tradition in western Asia Minor – see Pecorella, op.cit., 101–4; T. Stech, review of Pecorella, *AJA* 90 (1986), 352; J. Seeher, *Die bronzezeitliche Nekropole von Demircihüyük-Sariket* (Istanbuler Forschungen 44; Tübingen, 2000), 22–3.

47 For the absolute dates of the developed Early Bronze II period in the Aegean see most recently Manning 1995 (n. 10), 170-2; with corrections by Maran (n. 13), 157–9, 424–6.

48 C. Renfrew, 'Cycladic Metallurgy and the Aegean Early Bronze Age', *AJA* 71 (1967), 15–8; id. 1972 (n. 36), 451–5.

49 Renfrew 1972 (n. 36), 480-504; T.H. van Andel and C.N. Runnels, 'An Essay on the 'Emergence of Civilisation' in the Aegean World', *Antiquity* 62 (1988), 234–47; C. Broodbank, 'The Longboat and Society in the Cyclades in the Keros-Syros Culture', *AJA* 83 (1989), 319–37; id., 'Ulysses without Sails: Trade, Distance, Knowledge, Power in the Early Cyclades', *World Archaeology* 24 (1993), 315–32; id., *An Island Archaeology of the Early Cyclades* (Cambridge, 2000), 247–56; Maran (n. 13), 432–43.

50 Broodbank 2000 (n. 49), 175–202, 237–46, 256–62.

51 Troy II: B. Brandau, *Troia. Eine Stadt und ihr Mythos* (Bergisch-Gladbach / Niedernhausen, 1997), 145–66; M. Korfmann, 'Der prähistorische Siedlungshügel Hisarlik', in: *Troia: Traum und Wirklichkeit* (Stuttgart, 2001), 347–8, 350 fig. 372; P. Jablonka, 'Eine Stadtmauer aus Holz', ibid., 391–94. Poliochni: L. Bernabò Brea, *Poliochni: Città preistorica nell'isola di Lemnos* I (Rome, 1964); II (Rome, 1976); Ou. Kouka, *Siedlungsorganisation in der Nord- und Ostägäis während der Frühbronzezeit (3. Jt.v.Chr.)* (Rahden, 2002), 30–128. Myrina: A. Archontidou-Argyri, 'Lemnos – proime epoche tou chalkou: erevna kai problematismos', in: Doumas and La Rosa (n. 40), 223–9; P. Avgerinou, 'O oikismos tes Myrinas: protes ektimeseis', ibid., 273–81; A. Ntova, 'Myrina Lemnou: oi archaioteres faseis tou proistorikou oikismou', ibid., 282–97; L. Acheilara, 'Myrina: oi mnemeiakes egkatastaseis tou oikopedou E. Kazole', ibid., 298–310. Koukonesi: Ch. Boulotis, 'Koukonesi Lemnou, Tessera chronia anaskafikes erevnas: theseis kai ypothetheseis', ibid., 230-70. Thermi: Kouka, op.cit., 147–247. On the importance of Troy II, Poliochni and Thermi in the import and distribution of tin in the Aegean and in the development of Aegean metallurgy see G. Nakou, 'The Role of Poliochni and the North Aegean in the Development of Aegean Metallurgy', in: Doumas and La Rosa (n. 40), 634–48; J.D. Muhly, 'Copper and Bronze in Cyprus and the Eastern Mediterranean', in: V.C. Piggot (ed.), *The Archaeometallurgy of the Asian World* (Philadelphia, 1999), 15; M. Korfmann, 'Troia als Drehscheibe des Handels im 2. und 3. vorchristlichen Jahrtausend', in: *Troia: Traum und Wirklichkeit* (Stuttgart, 2001), 355–68; E. Pernicka, 'Metalle machen Epoche', ibid., 369–72.

52 M.D. Theochari and L. Parlama, 'Palamari, an Early Bronze Age Settlement at Skyros', in: R. Hägg and D. Konsola (eds), *Early Helladic Architecture and Urbanization: Proceedings of a Seminar Held at the Swedish Institute in Athens, June 8, 1985* (Göteborg, 1986), 51–5, iid., 'Palamari Skyrou: He ochyromene pole tes proimes chalkokratias', in: Doumas and La Rosa (n. 40), 344–56; Kouka (n. 51), 5.

53 S. Hood, *Excavations in Chios 1938–1955. Emporio and Ayio Gala,* vols. I-II (BSA Supp. 15–16; London, 1981–1982); Kouka (n. 51), 258–75.

54 Milojcic (n. 40), 1; H.P. Isler, 'An Early Bronze Age Settlement on Samos', *Archaeology* 26 (1973), 170-5; H.-J. Weißhaar, 'Ausgrabungen im Heraion von Samos: 1980/81', *AA* 1985, 409–18; Kouka (n. 51), 285–94.

55 T. Marketou, 'Asomatos and Seraglio: EBA Production and Interconnections', *Hydra* 7 (1989), 40-7; ead., 'Asomatos Rodou: Ta Megaroschema kteria kai oi scheseis tous me to boreioanatoliko Aigaio', in: Doumas and La Rosa (n. 40), 407.

56 Marketou 1997 (n. 55), 395–413.

57 H. Erkanal, *Archaeological Researches at Liman Tepe* (Urla, 1995); id., 'Early Bronze Age Urbanization in the Coastal Region of Western Anatolia', in: Y. Sey (ed.), *Housing and Settlement in Anatolia. A Historical Perspective* (Istanbul, 1996), 70-82; id., 'Early Bronze Age Fortification Systems in Izmir Region', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 237–41; Kouka (n. 51), 6–7. Relations of Early Bronze Age Limantepe with other regions of the Aegean are indicated by the imports of sauceboats from the Cyclades and/or the Greek mainland and painted patterned ware from the Cyclades which are in the exhibition of the Archaeological Museum of Izmir. On the sauceboats see Maran (n. 13), 272–3; Broodbank 2000 (n. 49), 305. On the painted pattern ware see R.L.N. Barber and J.A. MacGillivray, 'The Early Cycladic Period: Matters of Definition and Terminology', *AJA* 84 (1980), 149–50.

58 See the map of metal ores in Anatolia in: Müller-Karpe (n. 38), 11 fig. 1. For prehistoric extraction of metals in Asia Minor see Th.C. Seeliger, E. Pernicka, G.A. Wagner, F. Begemann, S. Schmitt-Strecker, C. Eibner, Ö. Öztunali and I. Baranyi, 'Archäometallurgische Untersuchungen in Nord- und Ostanatolien', *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 32 (1985), 597–659; G.A. Wagner, E. Pernicka, Th.C. Seeliger, I.B. Lorenz, F. Begemann, S. Schmitt-Strecker, C. Eibner and Ö. Öztunali, 'Geochemische und isotopische Charakteristika früher Rohstoffquellen für Kupfer, Blei, Silber und Gold in der Türkei', *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 33 (1986), 723–52; G.A. Wagner, F. Begemann, C. Eibner, J. Lutz, Ö. Öztunali, E. Pernicka und S. Schmitt-Strecker, 'Archäometrische Untersuchungen an Rohstoffquellen des frühen Kupfers Ostanatoliens', *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 36 (1989), 637–86; G.A. Wagner and Ö. Öztunali , 'Prehistoric Copper Sources in Anatolia', in: Yalcin (n. 38), 31–67.

59 On the Cycladic longboats and their role in sea trade and power in the Aegean see Broodbank 1989 (n. 49), 319–37; id. 1993 (n. 49), 315–30; id. 2000 (n. 49), 96–102, 256–62. On the sea routes see Ch. Agouridis, 'Sea Routes and Navigation in the Third Millennium Aegean', *OJA* 16 (1997), 1–24.

60 On the probable role of Miletus in Bronze Age metal trade, see W.-D. Niemeier, 'Milet: Knotenpunkt im bronzezeitlichen Metallhandel zwischen Anatolien und der Ägäis?', in: Yalcin (n. 38), 125–36.

61 J. Aruz, 'Seal Imagery and Sealing Practices in the Early Aegean World', in: P. Ferioli, E. Fiandra, G.G. Fissore and M. Frangipane (eds), *Archives before Writing: Proceedings of the International Colloquium Oriolo Romano, October 23–25, 1991* (1994), 211–20; J. Weingarten, 'Another Look at Lerna: An EH IIB Trading Post', *OJA* 16 (1997), 147–66 (Weingarten's interpretation of Lerna IIIC-D as trading post of Anatolians goes, however, too far); Maran (n. 13), 232–39, 413, 421–4, 433. For an intimate connection between the Aegean and Anatolia reflected also in the forms of early Aegean seals, see J. Aruz, 'The Oriental Impact on the Forms of Early Aegean Seals', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 7–13.

62 Renfrew 1972 (n. 36), 192, 207; P. Misch, *Die Askoi in der Bronzezeit* (Jonsered, 1992), 76–8.

63 J.B. Rutter, 'An Exercise in Form vs. Function: The Significance of the Duck Vases', in: *Temple University Aegean Symposium* 10 (1985), 17.

64 Maran (n. 13), 420; M. Benzi, 'The Late Early Bronze Age Finds from Vathy Cave (Kalymnos) and their Links with the Northeast Aegean', in: Doumas and La Rosa (n. 40), 390.

65 Broodbank 2000 (n. 49), 335, 351–3 fig. 119.

66 See the distribution map of EB III duck vases by Misch (n. 62), 78 pl. 9, to which, beside the pieces from Miletus, the following have to be added: two almost complete vases and five fragments from the Vathy cave on Kalymnos: Benzi (n. 64), 388–90, pl. 3; and many examples from Asomatos on Rhodes: Marketou 1997 (n. 55), 401, fig. 6.

67 For the maintenance and possible extension of the existing Aegean and Mediterranean trade networks at the end of the third millennium BC, see Maran (n. 13), 443–50.

68 See H. Brückner, 'Delta Evolution and Culture – Aspects of Geoarchaeological Research in Miletos and Priene', in: G.A. Wagner,

E. Pernicka, and H.-P. Uerpmann (eds), *Troia and the Troad. Scientific Approaches* (Berlin and London, 2003), 130.

69 On Kamares pottery, see: G. Walberg, *Kamares: A Study of the Character of Palatial Middle Minoan Pottery* (Uppsala / Stockholm, 1976); Ph.P. Betancourt, *The History of Minoan Pottery* (Princeton, 1985), 95–102. MM IB: **Colour Pl. 4**, upper and lower left - cf. MacGillivray (n. 10), 131 no. 185, pl. 54. MM II: **Colour Pl. 4**, the three other fragments. The decoration of the fragment **Colour Pl. 4** upper right has a good parallel on a MM IIA-IIB cup of the Vasiliki House A/Zakros group of S. Andreou, *Pottery Groups of the Old Palace Period in Crete* (University of Cincinnati, Ph.D., 1978), 95 pl. 14.9, that of the fragment **Colour Pl. 4** lower right on a MM IIB cup from Kommos: Ph.P. Betancourt, *Kommos II: The Final Neolithic through Middle Minoan III Pottery* (Princeton, 1990), 90 no. 370 fig. 21 pl. 18. The fragment **Colour Pl. 4** upper centre shows part of a *Vierpass*-motif of S-shaped elements centrally oriented in the same direction. *Vierpass*-motifs of different crossing varieties and varieties with connected coils are known on MM I-II-pottery – see Walberg, op.cit., 57, 187, fig. 42, motif 11 no. iii; ead., *Provincial Middle Minoan Pottery* (Mainz, 1983), 47 motif 11 no. iii pl. 41 – and on seals of the Old Palatial period – see P. Yule, *Early Cretan Seals: A Study of Chronology* (Mainz, 1980), 162–4, pl. 27, motifs 48.3, 49.7. For the shape of the lentoid jug **Colour Pl. 5** cf. A.J. Evans, *The Palace of Minos at Knossos* II (London, 1928), 215 fig. 121a, colour pl. IXe; D. Levi, *Festòs e la civiltà minoica* (Incunabula Graeca LX; Rome, 1976), pl. 103b, colour pl. XXXd; J.L. Davis, *Keos V. Ayia Irini: Period V* (Mainz, 1986), 45, 82, pl. 57, U-93. For the Kamares pottery from Miletus, see A.E. Raymond, 'Kamares Ware (and Minoans?) at Miletus', *Aegean Archaeology* 5 (2001), 19–26.

70 See the distribution maps in Niemeier 1986 (n. 19), 246–7, 250, figs 3, 19, to which now in Egypt Tell el-Dab'a/Avaris has to be added – see G. Walberg, 'The Finds at Tell el-Dab'a and Middle Minoan Chronology', *Egypt and the Levant* 2 (1991), 115–8; J.A. MacGillivray, 'A Minoan Cup at Tell el-Dab'a', *Egypt and the Levant* 5 (1995), 81–4. For the exports of Kamares pottery, see also Walberg 1983 (n. 69), 141–5; MacGillivray (n. 10), 103–6.

71 J.A. MacGillivray, P.M. Day and R.E. Jones, 'Dark-faced Incised Pyxides and Lids from Knossos: Problems of Date and Origin', in: French and Wardle (n. 21), 91–4; MacGillivray (n. 10), 94; N. Momigliano, 'MM IA Pottery from Evans' Excavations at Knossos: a Reassessment', *BSA* 86 (1991), 172 with n. 117.

72 A parallel comes from the 'Vat Room Deposit' at Knossos: A.J. Evans, *The Palace of Minos at Knossos* IV (London, 1935), 90 fig. 57; M. Panagiotaki, *The Central Palace Sanctuary at Knossos* (BSA Supp. 31; London, 1999), 22, pls 1 a, 4 c; D.R. Theocharis, *Neolithic Greece* (Athens, 1973), 143 fig. 74 (colour photograph, erroneously dated to the Neolithic period).

73 Cf. Levi (n. 69), pl. 63; Y. Tzedakis and H. Martlew (eds), *Minoans and Mycenaeans, Flavours of their Time* (Athens, 1999), 98 no. 54, 90 no. 57, 96 no. 67, 146 no. 128, 162 no. 145.

74 Levi (n. 69), pl. 158. For the term 'scuttle' see H. Georgiou, *Keos VI. Ayia Irini: Specialized Domestic and Industrial Pottery* (Mainz, 1986), 28.

75 Similar to D. Levi and F. Carinci, *Festòs e la civiltà minoica II* (Incunabula Graeca LXXVII; Rome, 1988), pl. 99; C. Knappett, 'Can't Live without Them – Producing and Consuming Minoan Conical Cups', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 417 pl. 92a-b.

76 The type goes back to EM II in Crete – see P.M. Warren, *Myrtos: An Early Bronze Age Settlement in Crete* (London, 1972), 220-1, 243 fig 96 no. 75, pl. 74A; E.J.W. Barber, *Prehistoric Textiles* (Princeton, 1992), 104–5, fig. 3.23; D. Evely, *Minoan Crafts: Tools and Techniques, an Introduction* II (Göteborg, 2000), 498, 500 fig. 202.1–4. For a systematic study see J. Carrington Smith, *Spinning, Weaving and Textile Manufacture in Prehistoric Greece* (Ph.D. Diss. University of Tasmania at Hobart, 1975), 276–85.

77 E. Schofield, 'The Minoan Emigrant', in: O. Krzyszkowska and L. Nixon (eds), *Minoan Society: Proceedings of the Cambrige Colloquium 1981* (Bristol, 1983), 293–9, esp. 299; Wiener 1984 (n. 19), 17–25; id. 1990 (n. 19) 135, 137–9; R. Hägg and N. Marinatos, 'Conclusions', in: Hägg and Marinatos (n. 18), 221–2.

78 See Evely (n. 76), 298–311; J.W. Shaw, A. van de Moortel, P.M. Day and V. Kilikoglou, *A LM IA Ceramic Kiln in South-Central Crete* (Hesperia Supp. 30; Princeton, 2001), 12–24.

79 Levi (n. 69), 327–8, figs 510-11, dated by Levi in LM I but re-dated in MM II by F. Tomasello, 'Fornaci a Festòs ed Haghia Triada dall'età mediominoica all geometrica', in: *Kerameika ergasteria sten Krete apo ten archaioteta os semera: Praktika emerias Margerites, 30 Septembriou 1995* (Rethymnon, 1996), 29–30. Tomasello's redating must, however, be considered with some caution: see F. Carinci, 'Pottery Workshops at Phaestos and Haghia Triada in the Protopalatial Period', in: R. Laffineur and Ph.P. Betancourt (eds), *Techne. Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age: Proceedings of the 6th International Aegean Conference, Philadelphia, Temple University, 18–21 April 1996* (Aegaeum 16; Liège and Austin, 1997), 318–9.

80 Kos: kind information by T. Marketou. Miletus: see B. and W.-D. Niemeier, 'Milet 1994 -1995: Projekt 'Minoisch-mykenisches Milet', Zielsetzung und Grabung auf dem Stadionhügel und am Athenatempel', *AA* (1997), 222–4, fig. 41; W.-D. Niemeier, 'The Mycenaean Potters' Quarter at Miletus', in: Laffineur and Betancourt (n. 79), 347–51, pl. CXLVIb.

81 *CMS* V, Supp. 3.2 (2004), no. 476. For the shape cf. Yule (n. 69), 38, shape class 4c; K. Sbonias, *Frühkretische Siegel: Ansätze für eine Interpretation der sozial-politischen Entwicklung auf Kreta während der Frühbronzezeit* (Oxford, 1995), 55–6 no. 21; for the motif cf. Yule (n. 69), 121–2, motif 2, nos. 5–6, pls 2–3. For the stylistic group see ibid., 209–10; Sbonias, op.cit., 107–13. Sbonias has renamed Yule's 'Border/Leaf Complex' to 'Archanes Script Group' and corrected Yule's date for it which had been a little too high.

82 For the shape cf. Yule (n. 69), 60, shape class 17b. For the motif ibid., 143–4 motif 23, pl. 25. For the stylistic group see ibid., 212–3.

83 See E. Hallager, *The Minoan Roundel and other Sealed Documents in the Neopalatial Linear A Administration* (Aegaeum 14; Liège and Austin, 1996), 21–3, fig. 2, p. 36; W. Müller, in: *CMS* II.7 (1998), 271–3.

84 See Yule (n. 69), 160 motif 46, pl. 26 no. 12.

85 On red slip wares of Middle Bronze Beycesultan (V and IV) being an inheritance of Early Bronze III see Lloyd and Mellaart (n. 33), 200. The finds from Miletus III are studied by A.E. Raymond in her Ph.D. at the University of Toronto.

86 M.H. Wiener, 'Trade and Rule in Palatial Crete', in: R. Hägg and N. Marinatos (eds), *The Function of the Minoan Palaces: Proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10-16 June, 1984* (Stockholm / Göteborg, 1987), 216–66; id., 'The Nature and Control of Minoan Foreign Trade', in: N.H. Gale (ed.), *Bronze Age Trade in the Mediterranean. Papers Presented at the Conference at Rewley House, Oxford, in December 1989* (Brooklyn, 1991), 325–50.

87 Broodbank 2000 (n. 49), 356–61.

88 Niemeier 1984 (n. 19), 206–7; id. 1986 (n. 19), 246–7; id., 'The Minoans in the South-Eastern Aegean and in Cyprus', in: V. Karageorghis and N.C. Stampolidis (eds), *Eastern Mediterranean. Cyprus – Dodecanese – Crete 16th–6th Cent. B.C.: Proceedings of the International Symposium Held at Rethymnon – Crete in May 1997* (Athens, 1998), 29–36. For Kos see A. Papagiannopoulou, 'Were the S.E. Aegean Islands Deserted in the MBA', *Anat. Stud.* 35 (1985), 87–8, figs 1–2 (a decorated straight sided cup and a shallow unpainted handleless bowl from a MBA stratum). The presence of Old Palace period Minoans at Iasos and Knidos is problematic. In her current study of the Minoan material from Iasos N. Momigliano has as yet identified only very little Old Palace period material. The stratigraphical sequence of 'Edificio F' presented by C. Laviosa, 'Rapporti fra Creta e la Caria nell'età del bronzo', in: *Pepragmena tou 3. Diethnous Kretologikou Synedriou, Rethymnon 1971* (Athens, 1973), 185–8, has been corrected; there is no phase of the Old Palace period, the building was erected in the Neopalatial period – see N. Momigliano, I. Morabito, G. Graziadio, P. Belli and M. Benzi, 'Report on the 2001 Study Season of the Bronze Age Levels at Iasos (SW Turkey)', *SMEA* 43 (2001), 269–73. The pottery presented in earlier publications as Kamares ware is in fact LB I south-east Aegean Minoanising Light-on-Dark pottery – for this see M. Marthari, T. Marketou, and R.E. Jones, 'LB I Ceramic Connections between Thera and Kos', in: Hardy, Doumas, Sakellarakis and Warren (n. 19), 177. The same may be true for Knidos, from where the finds of Kamares pottery made in the excavations by I.C. Love have only been mentioned but not yet illustrated – see M.J. Mellink, 'Archaeology in Asia Minor', *AJA* 82 (1978), 321.

89 D. Matsas, 'Samothrace and the Northeastern Aegean: The Minoan Connection', *Studia Troica* 1 (1991), 159–79; id., 'Minoan Long Distance Trade: a View from the Northern Aegean', in: R. Laffineur and W.-D. Niemeier (eds), *Politeia, Society and State in the Aegean Bronze Age: Proceedings of the 5th International Aegean Conference,*

University of Heidelberg, 10-13 April 1994 (Aegaeum 12; Liège and Austin, 1995), 235–46; MacGillivray (n. 10), 104.

90 S. Alp, *Zylinder- und Stempelsiegel aus Karahöyük bei Konya* (Ankara, 1968), 276; D. Levi, 'Sulle origini minoiche', *PP* 127 (1969), 241–64. See also more recently J. Aruz, 'Crete and Anatolia in the Middle Bronze Age: Sealings from Phaistos and Karahöyük', in: M.J. Mellink, E. Porada and T. Özgüc (eds), *Aspects of Art and Iconography: Anatolia and its Neighbours. Studies in Honor of Nimet Özgüc* (Ankara, 1993), 35–45.

91 J. Weingarten, 'The Multiple Sealing System of Minoan Crete and its Possible Antecedents in Anatolia', *OJA* 11 (1992), 25–37.

92 Cf. the summaries by K.R. Veenhof, 'Kanesh: An Assyrian Colony in Anatolia', in: J.M. Sasson (ed.), *Civilizations of the Ancient Near East* (New York, 1995), 859–71; and T. Bryce, *The Kingdom of the Hittites* (Oxford, 1998), 21–33.

93 E.N. Davis, *The Vapheio Cups and Aegean Gold and Silver Ware* (New York, 1977), 87–94; ead., 'The Silver Kantharos from Gournia', in: *Temple University Aegean Symposium* 4 (1979), 34–45; H.-G. Buchholz, *Ugarit, Zypern und Ägäis: Kulturbeziehungen im zweiten Jahrtausend v. Chr.* (Alter Orient und Altes Testament 261; Münster, 1999), 276–80.

94 On this process see Bay (n. 29), 22–5, 40-3; Brückner (n. 28), 251–2.

95 K. Branigan, 'Minoan Colonialism', *BSA* 76 (1981), 23–33.

96 Matsas 1991 (n. 89), 164–68; id. 1995 (n. 89), 236.

97 See above with n. 9.

98 Niemeier and Niemeier (n. 80), 229–44; Niemeier 1998 (n. 88), 32–5; B. and W.-D. Niemeier, 'The Minoans of Miletus', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 543–53.

99 See below with notes 237–44.

100 See Niemeier and Niemeier (n. 80), 232–4, figs 58–63, 236, fig. 72 a-b (some corrections: for stratigraphical reasons recognized in subsequent seasons the vessels on figS 63–4, 72 a-b are of LM IA date); iid. 1999 (n. 98) 547 pl. CXVIIIa-b.

101 The term 'Marine Style' is problematic, since marine motifs painted on vessels of the palatial LM IB pottery do not form a stylistic group but a group of motifs. Other vessels of the same style are decorated with floral and other motifs – see W.-D. Niemeier, 'Die Katastrophe von Thera und die spätminoische Chronologie', *JdI* 95 (1980), 7; W. Müller, *Kretische Tongefässe mit Meeresdekor* (Archäologische Forschungen 19; Berlin, 1997), 17. For the coral and octopus motifs of the Miletus fragments, cf. most recently ibid.,158–96, 222–43.

102 See Müller (n. 101), 305–6.

103 The term ' Standard Tradition', introduced by Ph.P. Betancourt, *The History of Minoan Pottery* (Princeton, 1985), 137–40, is more apt than the old term 'sub LM IA' coined by Furumark (n. 22), 153–4. For the dot spiral being a typical LM IB 'standard tradition' motif see Niemeier (n. 101), 34–6, fig. 15.5–8, for a good parallel from Knossos for the stirrup jar see P. Warren, 'Knossos: Stratigraphical Museum Excavations, 1978–1980, Part I', *AR* 27 (1980-81), 82, fig. 25.

104 Cf. S. Marinatos, *Excavations at Thera* II (Athens, 1969), 14, fig. 5, pl. A; G.E. Mylonas, *O taphikos kyklos B ton Mykenon* (Athens, 1973), 57 no. Gamma 27, pl. 44a.

105 For the double axe motif see O.T.P.K. Dickinson, 'The Definition of Late Helladic I', *BSA* 69 (1974), 110, fig. 2, second from left; id., *The Origins of Mycenaean Civilisation* (Göteborg, 1977), 26, fig. 5, second from left; P.A. Mountjoy, *Mycenaean Decorated Pottery: A Guide to Identification* (Göteborg, 1986), 32 fig. 31.7. Mycenaean imports at Miletus started by LH I: Niemeier and Niemeier (n. 80), 231, fig. 59 upper second and third from left – cf. Dickinson 1974, op. cit., 110 fig 1, fourth line, first and third from left; id. 1977, op. cit., 26, fig. 4, fourth line, first and third from left, pl. 20d-e; Mountjoy, op. cit., 15 fig. 8.1–2; ead., *Regional Mycenaean Decorated Pottery* (Rahden, 1999), 69 fig. 9a, h, 203 fig. 62.3, 253 fig. 82.8.9.12, 307 fig. 104a, h, 313 fig. 105.7, 868 fig. 353.3, 895 fig. 363.8–9, 965 fig. 394.2, 1082 fig. 442.1; Y.G. Lolos, 'On the Late Helladic I of Akrotiri, Thera', in: D.A. Hardy and A.C. Renfrew (eds), *Thera and the Aegean World III, Proceedings of the Third International Congress, Santorini, Greece, 3–9 September 1989, Vol. 3: Chronology* (London, 1990), 52 fig. 2.1–4.

106 Cf. M.R. Popham, 'The Proto White Slip Pottery of Cyprus', *Op. Ath.* 4 (1962), 281 figs 1.3, 2, 5; id., 'White Slip Ware', in: P. Aström, *The Swedish Cyprus Expedition IV 1 C: The Late Cypriote Bronze Age, Architecture and Pottery* (Lund, 1972), 435 fig. 47.2. 4.6.

107 J.L. Davis, 'The Earliest Minoans in the South-East Aegean', *Anat. Stud.* 33 (1982), 33–41; Marthari, Marketou and Jones (n. 88), 171–84.

108 Provenance studies of the Minoan imported pottery at Miletus have been started by C. Knappett.

109 See the distribution map in Niemeier 1986 (n. 19), fig. 21, to which a bridge-spouted jar from Kamid el-Loz in Lebanon is to be added – see C. Liliquist, in: W. Adler, *Kamid el-Loz 11: Das Schatzhaus im Palastbereich und die Befunde des Königsgrabes* (Bonn, 1994), 208, 211 fig. 34, pl. 16.

110 For Standard Tradition ware from these sites see Niemeier (n. 101), 14–5, 17; for their interpretation as Minoan 'settlement colonies', see Furumark (n. 22), 177–81; M. Benzi, 'Evidence for a Middle Minoan Settlement on the Acropolis at Ialysos (Mt. Philerimos)', in: Hägg and Marinatos (n. 18), 93–104 (Trianda); J.N. Coldstream and G.L. Huxley, 'The Minoans of Kythera', ibid., 107–10 (Kastri).

111 See P. Warren, *The Aegean Civilizations* (London, 1975), 101; Hägg and Marinatos (n. 77), 221–2; Niemeier 1986 (n. 19), 248–49; Wiener 1990 (n. 19), 134–45; Niemeier and Niemeier 1999 (n. 98), 544–5.

112 As aready mentioned in connection with the Minoan type domestic pottery from Miletus III – see above with n. 77.

113 Coldstream and Huxley (n. 110), 108; R. Hägg, 'Degrees and Character of Minoan Influence on the Mainland', in: Hägg and Marinatos (n. 18), 119–20; N. Marinatos, 'Minoan Threskeiocracy on Thera', ibid., 167–76; Y.A. Sakellarakis, 'Minoan Religious Influence in the Aegean: the Case of Kythera', *BSA* 91 (1996), 81–99.

114 Coldstream and Huxley (n. 110), 108–9; Hägg (n. 113), 119.

115 Wiener 1984 (n. 19), 19–20; C. Gillis, *Minoan Conical Cups: Form, Function and Siginificance* (Göteborg, 1990), passim – cf. the critical remarks about Gillis' methodology in the review of this book by P. Warren, *JHS* 113 (1993), 219–20; D.W. Rupp and M. Tsipopoulou, 'Conical Cup Concentrations at Neopalatial Petras: A Case for a Ritualized Reception Ceremony with Token Hospitality', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 729–38.

116 J.N. Coldstream, in: J.N. Coldstream and G.F. Huxley (eds), *Kythera: Excavations and Studies* (London, 1972), 285.

117 H. Boyd Hawes, R.E. Williams, R.B. Seager and E.H. Hall, *Gournia, Vasiliki and other Prehistoric Sites on the Isthmus of Hierapetra, Crete* (Philadelphia, 1908), pl. II.70,72; Ph.P. Betancourt, *Cooking Vessels from Minoan Kommos: a Preliminary Report* (Occasional Paper 7, Institute of Archaeology, University of California, Los Angeles; 1980), 3–5, figs 2, 5A; H. Martlew, 'Domestic Coarse Pottery in Bronze Age Crete', in: French and Wardle (n. 21), 421–4, type D I; Tzedakis and Martlew (n. 73), 107–9 nos. 75, 77–9, 183 no. 173, 112 no. 822; S. Marinatos, *Excavations at Thera* II (Athens, 1969), 23 fig. 14; id., *Excavations at Thera* V (Athens, 1972), pl. 45; id., *Excavations at Thera* VII (Athens, 1976), pl. 28; Ch. Doumas, M. Marthari and Ch. Televantou, *Museum of Prehistoric Thera: Brief Guide* (Athens, 2000), 54 fig. 51. The horizontal grooves under the rim appear to be a local Milesian feature. I do not know parallels from Crete, but one from Thera: Marinatos 1972, op. cit., pl. 45.

118 A Minoan standard shape from MM I on - see Betancourt (n. 103), 74, fig. 48. LM I domestic ware example: Boyd Hawes, Williams, Seager and Hall (n. 117), pl. 2.48.

119 Cf. S. Marinatos, *Excavations at Thera* IV (Athens, 1971), pl. 101 a; H.S. Georgiou, 'Minoan Coarse Wares and Minoan Technology', in: Krzyszkowska and Nixon (n. 77), 78–80; ead. (n. 74), 23–8, pls 5, 17.

120 Similar to Georgiou (n. 74), 28–9, pls 6, 17.

121 Cf. Boyd Hawes, Williams, Seager and Hall (n. 117), pl. I.10-12; G. Walberg, *Middle Minoan III – A Time of Transition* (Jonsered, 1992), 63, Form 10.I.28. See also Panagiotaki (n. 72), 133.

122 Similar to Boyd Hawes, Williams, Seager and Hall. (n. 117), pl. 2.50; Furumark (n. 22), 165, fig, 6 no. 88.

123 Of the type Georgiou (n.119), 80-7, figs 4–6; ead.(n. 74), 4–11, pls 2–3, 14–5.

124 On the loom-weights of the Minoan disc-shaped standard type see above with n. 76.

125 Cf. a parallel from Ayia Triada: Evely (n. 76), 276 no. 44, pl. 74.

126 See C.G. Yavis, *Greek Altars: Origins and Typology, Including the Minoan-Mycenaean Offertory Apparatus; an Archaeological Study in the History of Religion* (St. Louis, 1949), 22–7; M.P. Nilsson, *The Minoan-Mycenaean Religion and its Survival in Greek Religion* (2nd edn; Lund, 1950), 117–22; G.C. Gesell, *Town, Palace, and House Cult in Minoan Crete* (Göteborg, 1985), 30; N. Marinatos, *Minoan Sacrificial Ritual: Cult Practice and Symbolism* (Stockholm, Göteborg, 1986), 14–22; ead., *Minoan Religion: Ritual, Image, and Symbol* (Columbia, 1993), 33–5, fig. 30; B. Rutkowski, *The Cult Places of the Aegean* (New Haven, 1986), 16, 81, 84, 103, 106, 126, 205; W.-D. Niemeier, 'Zur Ikonographie von Gottheiten und Adoranten in den Kultszenen auf

minoischen und mykenischen Siegeln', in: I. Pini (ed.), *Fragen und Probleme der bronzezeitlichen ägäischen Glyptik* (CMS Supp. 3; Berlin, 1989), 167–9, fig. 1.13–17.

127 For the finds of conical cups bottom upwards in Minoan sacral contexts see Evans (n. 69), 548, fig. 348; Rutkowski (n. 126), 44, 146.

128 The bones found in our excavation are studied by J. Peters, Munich. For cattle and goats being the main sacrificial animals in Minoan Crete see Marinatos 1986 (n. 126), 11–14; M. Andreaki-Vlazaki and D. Mylona, 'Minoan Kydonia: Town of Chania, Excavation of the Splanzia' in: Tzedakis and Martlew (n. 73), 104–6. Cattle (a bull) and goats are represented as sacrificial animals on the sarcophagus of Ayia Triada: F. Matz, *Göttererscheinung und Kultbild im minoischen Kreta* (Mainz, 1958), 20-4, fig. 10; Ch.R. Long, *The Ayia Triadha Sarcophagus: A Study of Late Minoan and Mycenaean Funerary Practices and Beliefs* (Göteborg, 1974), 61–4 fig. 87

129 See Marinatos 1986 (n.126), 35–7.

130 Marinatos 1986 (n. 126), 37–9; ead. 1993 (n. 126), 98–103.

131 Cf. S. Xanthoudides, 'Minoikon megaron Nirou', *Eph. Arch.* (1922), 8 fig. 8, 15–16 fig. 12; Evans (n. 69), 302 fig. 175; Nilsson (n. 126), 123–4; S. Marinatos, *Excavations at Thera* IV (Athens, 1971), pls 81–2; id., *Excavations at Thera* V (1972), colour-pl. C; id., *Excavations at Thera* VII (Athens, 1976), pl. 51; Ch. Doumas, *The Wall-Paintings of Thera* (Athens, 1992), 180-3 figs 142–4.

133 R. Hägg. 'Mycenaean Religion: The Helladic and the Minoan Components', in: A. Morpurgo Davies and Y. Duhoux (eds), *Linear B: a 1984 Survey* (Louvain-la-Neuve, 1985), 210-2.

133 See Gesell (n. 126), 10, 34, 62; Rutkowski (n. 126), 56, 87, 113, 161.

134 For Minoan rhyta with relief appliqués of felines see F. Chapoutier and P. Demargne, *Fouilles éxécutées à Mallia: Quatrième Rapport: Exploration du palais, bordure méridionale et recherches complémentaires (1929–1935 et 1946–1969)* (Études Crétoises XII; Paris, 1962), 54, pls 10, 29 = Ch. Zervos, *L'art de la Crète néolithique et minoenne* (Paris, 1956), fig. 419; H. Matthäus, 'Eine minoische Reliefscherbe in Marburg', *MarbWPr* 1977–78, 11–20, pl. 4.1–3.

135 Niemeier and Niemeier (n. 80), 236–7, figs 72g, 75.

136 On this type of rhyton see R.B. Koehl, 'The Functions of Aegean Bronze Age Rhyta', in: R. Hägg and N. Marinatos (eds), *Sanctuaries and Cults in the Aegean Bronze Age: Proceedings of the First International Symposium at the Swedish Institute in Athens, 12–13 May, 1980* (Stockholm, 1981), 179.

137 Niemeier and Niemeier (n. 80), 236–7, figs 72f, 74. On the chalice and its ritual function see P. Warren, *Minoan Stone Vases* (London, 1969), 36–7; Hägg (n. 132), 207.

138 Evans 1935 (n. 72), 379–90, figs 318–20, 323–5, pl. XXXI – the fragment with the foot of a chalice held by a hand ibid., 390, fig. 325; M.A.S. Cameron, 'The 'Palatial' Thematic System in the Knossos Murals. Last Notes on the Knossos Frescoes', in: Hägg and Marinatos (n. 86), 324–5, 322 fig. 2.

139 *CMS* I, no. 179; S. Marinatos and M. Hirmer, *Kreta, Thera und das mykenische Hellas* (Munich, 1973), pl. 229; *History of the Hellenic World: Prehistory and Protohistory* (University Park, PA; 1974), fig. on p. 307.

140 On the 'Minoan Genius' see: M.V. Gill, 'The Minoan Genius', *AM* 79 (1964), 1–21; J. Weingarten, *The Transformation of Egyptian Taweret into the Minoan Genius: A Study in Cultural Transmission in the Middle Bronze Age* (1991); S. Chryssoulaki, 'A New Approach to Minoan Iconography – an Introduction: The Case of the Minoan Genii', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 111–7.

141 Ch. Boulotis, *Studien zu ägäischen Prozessionen im 2. Jt.v.Chr.* (unpublished Ph.Diss, Würzburg, 1980), who has reconstructed the 'Campstool' fresco in quite a different way than Evans and Cameron.

142 R. Hägg, 'Epiphany in Minoan Ritual', *BICS* 30 (1983), 184–5; id., 'Die göttliche Epiphanie im minoischen Ritual', *AM* 101 (1986), 41–62; on this group of representations see also Matz (n. 128), 16–7; W.-D. Niemeier, 'Zur Deutung des Thronraumes im Palast von Knossos', *AM* 101 (1986) 71–92, and id. 1989 (n. 126), 173–4, fig. 4.5,11–12 (glyptic representations of 'enacted epiphanies' with libation offerings).

143 See N. Marinatos, *Art and Religion in Thera: Reconstructing a Bronze Age Society* (Athens, 1984), 31–120; R. Hägg, 'Pictorial Programmes in Minoan Palaces and Villas?', in: J.-C. Poursat and P. Darcque (eds), *L'iconographie minoenne* (BCH Supp. XI; Athens and Paris, 1985), 209–17; Cameron, op.cit. (n. 138), 321–5; F. Blakolmer, 'The Functions of Wall Painting and other Forms of Architectural Decoration in the Aegean Bronze Age', in: S. Sherratt (ed.), *Proceedings of the First International Symposium 'The Wall Paintings of Thera', Petros M. Nomikos Conference Centre, Thera, Hellas, 30 August – 4 September 1997* (Athens, 2000), 396–9.

144 On the Minoan character of the fresco-technique as opposed to the secco-technique almost generally used in the Near East and Egypt, see W.-D. Niemeier, 'Minoan Artisans Travelling Overseas: the Alalakh Frescoes and the Painted Plaster Floor at Tel Kabri (Western Galilee)', in: Laffineur and Basch (n. 20), 195; B. and W.-D. Niemeier, 'Minoan Frescoes in the Eastern Aegean', in: Cline and Harris-Cline (n. 19), 71; iid., 'Aegean Frescoes in Syria-Palestine: Alalakh and Tel Kabri', in: Sherratt (n. 143), 790-3.

145 See A. Brysbaert, 'Common Craftsmanship in the Aegean and East Mediterranean Bronze Age: Preliminary Technological Evidence with Emphasis on the Painted Plaster from Tell-el Dab'a, Egypt', *Egypt and the Levant* 12 (2002), 95–105; A preliminary report on the painted plaster from Miletus is in preparation for *AA*.

146 Cf. A.J. Evans, *The Palace of Minos at Knossos* III (London, 1930), 381–3 figs 253–4, 387–38 fig. 259; D. Evely (ed.), *Fresco: A Passport into the Past: Minoan Crete through the Eyes of Mark Cameron* (Athens, 1999), fig. on p. 134 centre; Doumas (n. 131), 132–3 figs 93–4.

147 Cf. M.A.S. Cameron, R.E. Jones and S.E. Philippakis, 'Scientific Analyses of Minoan Fresco Samples from Knossos', *BSA* 72 (1977), 154; S.A. Immerwahr, *Aegean Painting in the Bronze Age* (University Park, PA, 1990), 14.

148 For the the 'notched plume' motif representing in Aegean iconography the feathers of griffins wings see A.J. Evans, *The Palace of Minos at Knossos* I (London, 1921), 548–51, fig. 400; C. d'Albiac, 'The 'Diagnostic' Wings of Monsters', in: Ch. Morris (ed.), *Klados: Essays in Honour of J.N. Coldstream* (London, 1995), 64.

149 Knossos: Evans (n. 69), 451 fig. 264; Evely (n. 146), 222–3 no. 56h; Phaistos: Levi (n. 69), 696, colour pl. 86.5

150 See L. Morgan, *The Miniature Wall Paintings of Thera: A Study in Aegean Culture and Iconography* (Cambridge, 1988), 24 with n. 74.

151 Knossos: Evans (n. 148), 537, colour pl. VI; id. (n. 69), 455 fig. 266 C. Amnisos: Marinatos and Hirmer (n. 139), colour pl. XXIII.

152 Knossos: Evely (n. 146), 206–7 no. 38; Thera: A. Vlachopoulos, 'The Reed Motif in the Theran Wall Paintings and its Association with Aegean Pictorial Art', in: Sherratt (n. 143), 631–42 figs 1–8.

153 A. Dessenne, 'Le griffon créto-mycenièn: inventaire et remarques', *BCH* 81 (1957), 203–15; A. Bisi, *Il grifone: Studi di un motivo iconografico nell'Antico Oriente mediterraneo* (Rome, 1965), 167–84; Niemeier 1986 (n. 142), 75 with references in ns 87–9.

154 Marinatos 1993 (n. 126), 149, 152, 193, 195.

155 See J. Schäfer, 'Gärten in der bronzezeitlichen ägäischen Kultur?', in M. Caroll-Spillecke (ed.), *Der Garten von der Antike bis zum Mittelalter* (Mainz, 1992), 112–26; M.C. Shaw, 'The Aegean Garden', *AJA* 97 (1993), 666–8.

156 Marinatos (n. 143), 85–92; ead. 1993 (n. 126), 193–5.

157 For this inscription see W.-D. Niemeier, 'A Linear A Inscription from Miletus (MIL Zb 1)', *Kadmos* 36 (1996), 87–99 fig. 1–2 pl. 1 b. The date has to be corrected from LM IB to LM IA (on the context see n. 100). Five new parts of inscriptions will be published by W.-D. Niemeier and J. Zurbach, 'Neue Linear A-Texte aus Milet (MIL Zb 2–6)', *Kadmos*, forthcoming.

158 See the distribution map in Niemeier (n. 157), 99 fig. 3.

159 J.-P. Olivier, 'Rapport 1991–1995 sur les textes en écriture hiéroglyphique crétoise, en linéaire A et en linéaire B', in: S. Deger-Jalkotzy, S. Hiller and O. Panagl (eds), *Floreant Studia Mycenaea: Akten des X. Internationalen Mykenologischen Colloquiums in Salzburg vom 1.-5. Mai 1995* (Vienna, 1999), 429–30; G. Owens, 'Linear A in the Aegean: The Further Travels of the Minoan Script. A Study of the 30+ Extra-Cretan Minoan Inscriptions', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 583–95; Ch. Boulotis, 'Les nouveaux documents en linéaire A d'Akrotiri (Théra): remarques préliminaires', *BCH* 122 (1998), 407–11.

160 According to C. Knappett.

161 On the Bronze Age scripts and the problem of the pre-hellenic languages of Crete see most recently Y. Duhoux, 'Pre-Hellenic Language(s) of Crete', *Journal of Indoeuropean Studies* 26 (1998), 1–39.

162 See Th.G. Palaima, 'Linear A in the Cyclades: The Trade and Travels of a Script', in: *Temple University Aegean Symposium* 7 (1982), 15–22; Niemeier (n. 157), 92–4.

163 C. Watkins, 'The Language of the Trojans', in: M.J. Mellink (ed.), *Troy and the Trojan War: A Symposium Held at Bryn Mawr College, October 1984* (Bryn Mawr, 1986), 45–62; Bryce (n. 92), 10-11, 54–7; G.

Wilhelm, 'Die Sprachen des Hethiterreiches', in: *Die Hethiter und ihr Reich: Das Volk der 1000 Götter* (Stuttgart, 2002), 47; N. Oettinger, 'Indogermanische Sprachträger lebten schon im 3. Jahrtausend v.Chr. in Kleinasien', ibid., 51–2 fig. 2.

164 K.M. Petruso, *Keos VIII. Ayia Irini: The Balance Weights, an Analysis of Weight Measurement in Prehistoric Crete and the Cycladic Islands* (Mainz, 1992), 3.

165 Petruso (n. 164), 46 no. 148 (Praisos), 50 nos. 177 (Pachyammos), 179 (Crete, unknown provenance); A. Michaelidou, 'The Lead Weights from Akrotiri: The Archaeological Record', in: Hardy, Doumas, Sakellarakis and Warren (n. 19), 413 fig. 20 right.

166 Petruso (n. 164), 26–7 tables 2–3, 39 table 11, 42 table 13, 46 table 15.

167 Ibid., 64–5.

168 Ibid., 60-2 table 27.

169 Ibid., 38 no. 71 pl. 6.

170 Ibid., 46 no. 149 pls 8, 15.

171 *CMS* V, Supp. 3.2, no. 478. For the shape see Yule (n. 69), 45–6 no. 8a, for the motif ibid., 145–6 no. 24 pl. 16. Parallels for our seal: *CMS* II.3, no. 377; *CMS* VII, no. 43; *CMS* X, no. 62; J. Boardman, *Greek Gems and Fingerrings* (London, 1970), pl. 64.

172 *CMS* V, Supp. 3.2, no. 480. Cf. for the motif *CMS* II.6, no. 203; *CMS* II.7, nos. 96–7; *CMS* XI, no. 244; for the papyrus umbels: Boardman (n. 171), pl. 94.

173 J.W. Shaw, 'Minoan Architecture: Materials and Techniques', *ASAtene* 49 (1971), 83–111.

174 N. Marinatos and R. Hägg, 'On the Ceremonial Function of Minoan Polythyra', *Op. Ath.* 16 (1986), 57–74; C. Palyvou, 'Circulatory Patterns in Minoan Architecture', in: Hägg and Marinatos (n. 86), 195–201; Marinatos 1993 (n. 126), 84–7.

175 Gesell (n. 126), 22–6; Marinatos 1993 (n. 126), 77–84.

176 Ashlar masonry, polythyra and a 'lustral basin' (adyton) have been found at Akrotiri on Thera: J.W. Shaw, 'Consideration of the Site of Akrotiri as a Minoan Settlement', in: Ch. Doumas (ed.), *Thera and the Aegean World II: Papers presented at the Second International Scientific Congress, Santorini, Greece, August 1978* (1980), 434–5; S. Hood, 'The Cretan Element on Thera in Late Minoan IA', in: Hardy, Doumas, Sakellarakis and Warren (n. 19), 119, 121; C. Palyvou, 'Theran Architecture through the Minoan Looking Glass', in: Betancourt, Karageorghis, Laffineur and Niemeier (n. 18), 609–14. Ashlar masonry and a polythyron were unearthed at Trianda on Rhodes: T. Marketou, 'New Evidence on the Topography and Site History of Prehistoric Ialysos', in: S. Dietz and I. Papachristodoulou (eds), *Archaeology in the Dodecanese* (Copenhagen, 1988), 30; J.L. Davis, 'Review of Aegean Prehistory I: The Islands of the Aegean', *AJA* 96 (1992), 749.

177 F. Blakolmer, 'Komparative Funktionsanalyse des malerischen Raumdekors in minoischen Palästen und Villen', in: Laffineur and Niemeier (n. 89), 471–2; id. (n. 143), 402.

178 Niemeier 1998 (n. 88), 35 fig. 11. On the technique see Shaw (n. 173), 92.

179 For Zakro see N. Platon, *Zakros: The Discovery of a Lost Palace of Ancient Crete* (New York, 1971), fig. on p. 91.

180 The faunal remains of Miletus III have not yet been studied, those recovered from Miletus I and II are too few for a statistical analysis.

181 The publication of the research on the fauna of Miletus is in preparation.

182 See Niemeier and Niemeier in: Cline and Harris-Cline (n. 19), 69–96; iid., in: Sherratt (n. 143), 763–800. In a paper read in April 1990 I expected that Minoan fresco paintings would probably be found also in other Levantine palaces beyond Tel Kabri and Alalakh and pointed to a wall-painting from the palace at Qatna – W.-D. Niemeier, in Laffineur and Basch (n. 20), 196, 199. For this statement M. Bietak, 'Die Wandmalereien aus Tell el-Dab'a/Ezbet Helmi: Erste Eindrücke', *Egypt and the Levant* 4 (1994), 56, ascribed an 'almost mantic foresight' to me when having found freso fragments with strong Minoan affinities at Tell el-Dab'a. As to the palace at Qatna, in their new excavations M. Novák and P. Pfälzner have found in 2000 and 2001 wall-paintings showing Minoan motifs and Minoan style – see M. Novák and P. Pfälzner, 'Ausgrabungen in Tall Misifre-Qatna 2001: Vorbericht der deutschen Komponente des internationalen Forschungsprojektes', *Mitteilungen der Deutschen Orientgesellschaft zu Berlin* 134 (2002), 226–31, figs 13–6. They appear to belong to the same pattern of Minoan fresco painters travelling to the Near East in connection with diplomatic exchange – see Niemeier and Niemeier, in: Cline and Harris-Cline (n. 19), 93–6.

183 J. Vercoutter, *L'Égypte et le monde égéen préhéllenique* (Cairo, 1956), 311–21 pls 37–40, 323–8 pls 42–3, 357–9 pl. 61; S. Wachsmann, *Aegeans in the Theban Tombs* (Leuven, 1987), 55–61 pls 23–67. For the function as diplomatic gifts of the objects carried by the Keftiu see E.H. Cline, "My Brother, my Sun': Rulership and Trade between the LBA Aegean, Egypt, and the Near East', in: P. Rehak (ed.), *The Role of the Ruler in the Prehistoric Aegean: Proceedings of a Panel Discussion Presented at the Annual Meeting of the Archaeological Institute of America, New Orleans, Louisiana, 28 December 1992* (Aegaeum 11; Liège and Austin, 1995), 146–7.

184 Cf. the discussion of the introduction of the Minoan disk-shaped loomweights at Ayia Irini on Keos by J.L. Davis, 'Cultural Innovation and the Minoan Thalassocracy at Ayia Irini, Keos', in: Hägg and Marinatos (n. 18), 161–3.

185 Palaima (n. 162), 15–22.

186 Petruso (n. 164), 67.

187 Melas 1991 (n. 20), 181.

188 See, for instance, the palace of Beycesultan V, which is comparable in size and quality to the Minoan palaces: Lloyd and Mellaart (n. 85), 3–34 figs A.3–14 pls 1–19.

189 Cf. B. Kull, *Demircihüyük V: Die mittelbronzezeitliche Siedlung* (Mainz, 1988), 42–96; ead., 'Untersuchungen zur Mittelbronzezeit in der Türkei und ihrer Bedeutung für die absolute Chronologie der europäischen Bronzezeit', *PZ* 64 (1989), 53–65; J. Mellaart and A. Murray, *Beycesultan III.2: Late Bronze Age Pottery and Middle and Late Bronze Age Small Objects* (London, 1995), 99–109; D. Koppenhöfer, 'Die bronzezeitliche Troia VI-Kultur und ihre Beziehungen zu den Nachbarkulturen', *Studia Troica* 12 (2002), 281–395.

190 C.R. DeCorse, 'Material Aspects of Limba, Yalunka and Kuranko Ethnicity: Archaeological Research in Northeastern Sierra Leone', in: S. Shennan (ed.), *Archaeological Approaches to Cultural Identity* (London, 1989), 138.

191 Cf. for Akrotiri, where in the West House the Minoan (and Mycenaean) pottery constitutes only 10 % of the pottery: M. Marthari, 'The Chronology of the Last Phases of Occupation at Akrotiri in the Light of the Evidence from the West House Pottery Groups', in: Hardy and Renfrew (n. 105), 61; for Phylakopi, where the Minoan (and Mycenaean) pottery constitutes 7 % of the pottery of Phylakopi III: C. Renfrew, 'Prehistoric Exchange', in: Renfrew and Wagstaff (n. 36), 225; for Ayia Irini VI-VII: W.W. Cummer and E. Schofield, *Keos III. Ayia Irini: House A* (Mainz, 1984), 140.

192 See references in n. 110.

193 Cf. I. Rouse, *Migrations in Prehistory: Inferring Population Movement from Cultural Remains* (New Haven, 1986), 12–3.

194 Hood (n. 176), 118.

195 Branigan (n. 95), 25.

196 Furumark (n. 22), 176–7; Mee 1982 (n. 19), 5; L. Papazoglou-Manioudaki, 'Anaskafe tou minoikou oikismou sta Trianda tes Rodou', *A. Delt.* 37 (1982) A', 142–9; Marketou (n. 176), 30; Davis (n. 176), 749; J.L. Davis, I. Tzonou-Herbst and A.D. Wolpert, 'Addendum: 1992–1999', in: T. Cullen (ed.), *Aegean Prehistory: A Review* (AJA Supp. 1; Boston, 2001), 92–3.

197 Laviosa (n. 88), 185–8, 184 fig 1, pls 42–3; Momigliano *et.al.* (n. 88), 269–273; P. Belli, 'Iasos: Architectural Structures of the Middle-to-Late Bronze Age Structure', in: H. Friesinger and F. Krinzinger (eds), *100 Jahre Österreichische Forschungen in Ephesos, Akten des Symposiums Wien 1995* (Vienna, 1999), 677–81, pls 165–7.

198 E.M. Melas, *The Islands of Karpathos, Saros and Kasos in the Neolithic and Bronze Age* (Göteborg, 1985), 92–139.

199 Trianda: G. Monaco, 'Scavi nella zona micenea di Jaliso', *Clara Rhodos* 10 (1942), 54 fig. 5, 132–3 figs 84–5, pls 12–5; Furumark (n. 22), 153, fig. 1 nos. 11–12, 165–166 fig. 6 nos. 85–88, 173–175, fig. 10; Marketou (n. 176), 28–29 fig. 3; Papazoglou-Manioudaki (n. 196), 165–76, figs 7–19 pls 77–82.

200 Agelandros: Benzi (n. 110), 102, 104 no. 24 figs 34–5; Kolimbia: M. Melas, 'Explorations in the Dodecanese: New Prehistoric and Mycenaean Finds', *BSA* 83 (1988), 300-1 no. 9 fig.11.

201 Melas (n. 200), 307 nos. 9–11 fig. 14.

202 A. Sampson, *'Minoika apo ten Telo'*, *AAA* 13 (1980), 68–73, figs 2–5.

203 L. Morricone, 'Coo - scavi e scoperte nel 'Serraglio' e in locilità minori', *ASAtene* 50-51 (1972–1973), 282–5 figs 245–9.

204 M. Benzi, 'The Late Bronze Age Pottery from the Vathy Cave, Kalymnos', in: C. Zerner, P. Zerner and J. Winder (eds), *Proceedings of the International Conference 'Wace and Blegen: Pottery as Evidence for Trade in the Aegean Bronze Age 1939 – 1989', Held at the American School of Classical Studies in Athens, December 2–3, 1989* (Amsterdam, 1993), 279, 276 fig. 1e-f, pl. 36a-b.

205 Kastro-Hill: W. Wrede, 'Vorgeschichtliches in der Stadt Samos: Fundtatsachen', *AM* 60-61 (1935–36), 118–9; R. Heidenreich, 'Die Funde', ibid., 165–9 pls 50-3; W. Buttler, 'Nachträge', ibid., 190-4 fig. 5 pls 67.4, 70. Heraion: H. Walter, 'Frühe samische Gefässe und ihre Fundlage I', *AM* 72 (1957), 36–7 pls 49–50.
206 Mellink (n. 88), 321.
207 Laviosa (n. 88), 187–8 pls 45–7; Momigliano *et al.* (n. 88), 272–3 figs 3c,d, 4c.
208 W. Voigtländer, 'Umrisse eines vor- und frühgeschichtlichen Zentrums an der karisch-ionischen Küste', *AA* (1986), 645 fig. 21 no. 34, 647 fig. 22 nos 39–44; id., 'Akbük-Teichioussa: Zweiter Vorbericht', *AA* (1988), 607 fig. 39 no. 1; id., 'Teichiussa in der Bronzezeit', in: E. de Miro, L. Godart and A. Sacconi (eds), *Atti e Memorie del Secondo Congresso Internazionale di Micenologia, Roma - Napoli, 14–20 ottobre 1991* (Rome, 1996), 1499–1501 fig. 1.1–2. id., *Teichiussa* (Rahden, 2004), 305–8, pls 66–7, 150-1
209 S. Tül, in: Joukowsky (n. 33), 722–3 nos. 28–9 fig. 516. The report on Minoan pottery found at Didyma by R. Naumann, 'Didyma', *Anat. Stud.* 13 (1963), 24 and adopted by Niemeier 1984 (n. 19), 207 with distribution map n. 1 and Mee 1998 (n. 19), 137, does not stand up to closer examination. The only piece of Bronze Age pottery from Didyma as yet known is a LH IIIA:2 kylix – see Th. Schattner, 'Didyma, ein minoisch-mykenischer Fundplatz?', *AA* (1993), 369–72, fig. 1.
210 Melas (n. 198), 65 no. 572 fig. 33 pl. 83.
211 Monaco (n. 199), 97 fig. 45; Papazoglou-Manioudaki (n. 196), 177–8, pl. 83 c.
212 Morricone (n. 203), 279 fig. 240.
213 Momigliano *et al.* (n. 88), 15 fig. B.
214 Voigtländer 2004 (n. 208), 144 nos 27–30, pl. 144.
215 Monaco (n. 199), 88–9, 105, 117, 128, pls 9, 11; Furumark (n. 22), 177; Marketou (n. 176), 30; Davis (n. 176), 748–749.
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220 Ibid., 63 fig. 11.
221 Ibid., 63–4 fig. 12.
222 On this tradition see Poland (n. 1), 1907–11; F. Cassola, 'La talassocrazia cretese e Minosse', *PP* 12 (1957), 343–52; G. Huxley, *Crete and the Luwians* (1961), 1–7; id. (n. 6), 2–3, 7–10; G.S. Korres, 'The Relations between Crete and Messenia in the Late Middle Helladic and Early Late Helladic Period', in: Hägg and Marinatos (n. 18), 141–2; Niemeier 1986 (n. 19), 245.
223 Hood (n. 176), 121.
224 J. Beloch, 'Origini cretesi', *Ausonia* 4 (1909), 228; Ch.G. Starr, 'The Myth of the Minoan Thalassocracy', *Historia* 3 (1954), 282–91; M.I. Finley, *Early Greece: The Bronze and Archaic Ages* (New York and London, 1981), 38.
225 A.M Jasink, *Movimenti di popoli nell'area Egeo-Anatolica* (Florence, 1983), 51.
226 Cassola (n. 222), 345.
227 H.G. Evelyn-White, *Hesiod: The Homeric Hymns and Homerica* (London, 1967), 204–5 no. 74; R. Merkelbach and M.L. West, *Fragmenta Hesiodea* (Oxford, 1967), 70 no. 144; Cassola (n. 222), 347; Huxley (n. 6), 2–3.
228 Thucydides I.4.1; Herodotus I.171; Diodorus V.78.3, V.84.1; see also Poland (n. 1), 1909–10. As to evidence for Minoan presence in the Cyclades see Wiener 1984 (n. 19), 17–25; id. 1990 (n. 19), 128–60; Niemeier 1986 (n. 19), 248–9 figs 7–11; Barber (n. 46), 159–200; M. Cultraro, *L'anello di Minosse: archeologia della regalità nell'Egeo minoico* (Milan, 2001), 346–76.
229 H. Maehler, *Die Lieder des Bakchylides, Erster Teil: Die Siegeslieder* (Leiden, 1982) 52–5, lines 112–28. As to evidence for Minoan presence and administration on Keos see J.L. Caskey, 'Inscriptions and Potters' Marks from Ayia Irini in Keos', *Kadmos* 9 (1970), 101–11; Davis (n. 184), 159–65; Wiener 1990 (n. 19), 135, 137.
230 Diodorus V.54.5. As to archaeological evidence for Minoan presence on Karpathos see Melas (n. 198), passim.
231 Diodorus V.84.1
232 See above with n. 1.
233 E. and Y. Sakellarakis, 'The Keftiu and the Minoan Thalassocracy', in: Hägg and Marinatos (n. 18) 201–2.
234 Marinatos and Hirmer (n. 139), pl. 68. On its probable Anatolian provenience see Davis 1977 (n. 93), 85.
235 Marinatos and Hirmer (n. 139) pl. 199. On the Anatolian provenience and the possible mode of transfer into the Aegean see R.B. Koehl, 'The Silver Stag BIBRU from Mycenae', in: J.B. Carter and S.P. Morris (eds), *The Ages of Homer: A Tribute to Emily Townsend Vermeule* (Austin, 1995), 61–6.
236 T. Sipahi, 'Eine althethitische Reliefvase vom Hüeyindede Tepesi', *Ist. Mitt.* 50 (2000), 63–85 figs 2–10. D. Collon, 'Bull-Leaping in Syria', *Egypt and the Levant 4* (1994), 81–8; ead., 'Syrian Glyptic and the Thera Wall Paintings', in: Sherratt (n. 143) 284–5 has argued that glyptic Syrian bull leaping scenes antedate the earliest Minoan ones. As argued elsewhere, I see, however, Minoan influence in these Syrian representations: Niemeier and Niemeier 1998 (n. 144), 80 n. 122. In this regard, I am in agreement with Bietak (n. 182), 56–7; J. Aruz, 'Imagery and Interconnections', Egypt and the Levant 5 (1995), 36–9; and M.C. Shaw, 'Aegean Sponsors and Artists: Reflections on their Roles in the Patterns of Distribution of Themes and Representational Conventions in the Murals', in: Laffineur and Betancourt (n. 79), 499 n. 104. Sipahi, op.cit., 82–3 sees a difference between the bull-leaping scene shown on the Old Hittite vase from Hüseyinde and the Minoan bull leaping scenes, supposing that the Minoan bull leaping was a sport without ritual character. For the ritual character of Minoan bull leaping see, however, Marinatos 1993 (n. 126), 218–20.
237 W.L. Friedrich, *Feuer im Meer: Vulkanismus und die Naturgeschichte der Insel Santorin* (1994), 76–81, 55 fig. 4.5
238 H. Pichler and W.L. Friedrich, 'Mechanism of the Minoan Eruption of Santorini', in: Doumas (n. 176), 28–9 pl. 3.
239 Ch. Doumas and L. Papazoglou, 'Santorini Tephra from Rhodes', *Nature* 287 (1980), 322–4; Ch. Doumas, 'The Prehistoric Eruption of Thera and its Effects: The Evidence from Rhodes', in: Dietz and Papachristodoulou (n. 176) 34–8; T. Marketou, 'Santorini Tephra from Rhodes and Kos: Some Chronological Remarks Based on the Stratigraphy', in: Hardy and Renfrew (n. 105), 104–9.
240 J. Keller, 'Prehistoric Pumice Tephra on the Aegean Islands', in: Doumas (n. 176), 50-1; Marketou (n. 239), 101–4.
241 D.G. Sullivan, 'Minoan Tephra in Lake Sediments in Western Turkey: Dating the Eruption and Assessing the Atmospheric Dispersal of the Ash', in: Hardy and Renfrew (n. 105), 114–8; W.J. Eastwood, N.J.G. Pearce, J.A. Westgate, and W.T. Perkins, 'Recognition of Santorini (Minoan) Tephra in Lake Sediments from Gölhisar Gölü, Southwest Turkey by Laser Ablation ICP-MS', *JAS* 25 (1998), 677–87.
242 Voigtländer 1996 (n. 208), 1502 with n. 17.
243 The destruction deposit discussed in Niemeier and Niemeier (n. 80), 231–4 figs 56–7, 63–4, 65, 67, 68–70, 72 a-b and dated to LM IB belongs to the LM IA destruction – see also n. 100.
244 Publication forthcoming.
245 H.Huber, M. Bichler and A. Muselik, 'Identification of Pumice and Volcanic Ash from Archaeological Sites in the Eastern Mediterranean Region Using Chemical Fingerprinting', *Egypt and the Levant* 13 (2003), 8–88, figs 2, 5.
246 As also at Trianda – see Marketou (n. 176), 31.
247 Cf. Mountjoy 1986 (n. 105), 39–40 fig. 40 = ead. 1999 (n. 105), 511 fig. 181.43.
248 For LH IIB having started before the end of LM IB see Warren and Hankey (n. 10), 145–6.
249 See Niemeier 1984 (n. 19), 208–14; Barber (n. 46), 224–44; M. Benzi, 'Problems of the Mycenaean Expansion in the South-Eastern Aegean', in: de Miro, Godart, and Sacconi (n. 208), 947–74. The attempt by A.-L. Schallin, *Islands under Influence: The Cyclades in the Late Bronze Age and the Nature of Mycenaean Presence* (Jonsered, 1993) to play down the role of the Mycenaeans in the Cyclades during the 14th and 13th centuries BC is to me uncovincing. I agree with Barber (n. 46), 225–6, that 'The Cyclades now became a prosperous Mycenaean province, located on Mycenaean contact routes with Crete, Anatolia and ultimately Egypt'.
250 S. Marinatos, 'The Volcanic Destruction of Minoan Crete', *Antiquity* 13 (1939), 425–39; D.L. Page, *The Santorini Volcano and the Desolation of Minoan Crete* (London, 1970).
251 H. Pichler and W. Schiering, 'Der spätbronzezeitliche Ausbruch des

Thera-Vulkans und seine Auswirkungen auf Kreta', *AA* (1980), 1–33; Niemeier (n. 101), 1–76.

252 S. Hood, 'The Eruption of Thera and its Effects in Crete in Late Minoan I', in: *Pepragmena tou 3 .Diethnous Kretologikou Synedriou, Rethymnon 1971* (1973) Vol. I, 111–8; id., 'Warlike Destructions in Crete *c.* 1450 *B.C.*', in: *Pepragmena tou 5. Diethnous Kretologikou Synedriou, Ayios Nikolaos 1981* (Heraklion, 1985), Vol. I, 170-8; M.R. Popham, 'Sellopoulo Tombs 3 and 4: Two Late Minoan Graves near Knossos', *BSA* 69 (1974), 255–7; id. 'Late Minoan II to the End of the Bronze Age', in: D. Evely, H. Hughes-Brock and N. Momigliano (eds), *Knossos, A Labyrinth of History: Papers in Honour of Sinclair Hood* (London, 1994), 88–9, 92–4.

253 E. Hallager, 'The History of the Palace at Knossos in the Late Minoan Period', *SMEA* 19 (1978), 32–3; Pichler and Schiering (n. 251), 24–6; Niemeier 1984 (n. 19), 210-14.

254 J. Driessen and C.F. MacDonald, *The Troubled Island: Minoan Crete before and after the Santorini Eruption* (Aegaeum 17; Liège and Austin, 1997), passim.

255 LH IIIA:1 pottery: W. Schiering, 'Die Ausgrabung beim Athena-Tempel in Milet 1957, I: Südabschnitt', *Ist. Mitt.* 9–10 (1959–60), 28–9 pls 9.2, 13.6; P. Hommel, 'Die Ausgrabung am Athena-Tempel in Milet, II: Der Abschnitt östlich des Athenatempels', ibid. , 49 pl. 42.1.

256 Cf. Mountjoy 1986 (n. 105), 84 fig. 100.2. For LH IIIA:2 pottery from the destruction level of Miletus V see also Mee (n. 9), 135; Niemeier and Niemeier (n. 80), 226–8 figs 46–53.

257 See Niemeier and Niemeier (n. 80), 225–8 with discussion of the problem of the boundary line between LH IIIA:2 and LH IIIB:1.

258 Niemeier and Niemeier (n. 80), fig. 228b – cf. Mountjoy (n. 12), 89 no. 218.

259 Niemeier and Niemeier (n. 80) 219–20 fig. 37 - cf. P.A. Mountjoy, *Orchomenos V: Mycenaean Pottery from Orchomenos, Eutresis and other Boeotian Sites* (Munich, 1983), 95–6 no. 148 fig. 39; I. Tournavitou, *The Ivory Houses at Mycenae* (BSA Supp. 24; London, 1995), 92–3 pl. 13d; Tzedakis and Martlew (n. 73), 196 no. 181.

260 Niemeier and Niemeier (n. 80), 228 fig. 52 - cf. A.J.B. Wace, 'Mycenae 1939 - 1952, Part I: Preliminary Report on the Excavations of 1952', *BSA* 48 (1953), 16 pl. 10a.

261 For instance a bowl with micaceous red wash: Niemeier and Niemeier (n. 80), 228 fig. 53 – cf. Mellaart and Murray (n. 189), 12 fig. P.4.6–7.

262 Three bull figurines from the new excavations (one on **Fig. 26**) and two female figurines of the so-called Phi-type: Schiering (n. 255), 30 pl. 18.1–2. For the types and development of the Mycenaean terracotta figurines see E.B. French, 'The Development of Mycenaean Terracotta figurines', *BSA* 66 (1971), 101–87. On the ritual function see Nilsson (n. 126), 303–9; G.E. Mylonas, *Mycenae and the Mycenaean Age* (Princeton, 1966), 114–6, S. Günel, 'Eine Mykenische Figurine aus Liman Tepe', *Ist. Mitt.* 48 (1998), 448–9.

263 Excavated in 1968, see Schiering (n. 9), 77–9, plan Beilage 1, pl. 2.

264 G. Hiesel, *Späthelladische Hausarchitektur* (Mainz, 1990), 38–59. The term 'megaron' often used for this type should be abandoned because of its ambivalence; cf. ibid. , 23–239; P. Darcque. 'Pour l'abandon du terme "mégaron", in: P. Darcque and R. Treuil (eds), *L'habitat égéen préhistorique: Actes de la Table Ronde international, Athènes, 23–25 juin 1987* (BCH Supp. 19; Athens and Paris, 1990), 21–31.

265 The northern part of which was excavated in 1955–1957, see Schiering (n. 255), 10-1, map Beilage 2, 'Bezirk B'; the southern part, cut off from the northern one by a Roman channel and other disturbances, was excavated in 1995–1996.

266 Hiesel (n. 264), 59–67.

267 I.M. Shear, *The Panagia Houses at Mycenae* (Philadelphia, 1987), 17–8 pls 4–5A; K. Kilian, 'Ausgrabungen in Tiryns 1980: Bericht zu den Grabungen', *AA* (1982), 401–2, fig. 12.

268 S. Sinos, *Die vorklassischen Hausformen in der Ägäis* (Mainz, 1971), 18–21, 32, figs 43, 47, 50, 52–3, 82; K. Werner, *The Megaron during the Aegean and Anatolian Bronze Age* (Jonsered, 1993), 40-1 fig. 31a.

269 Sinos (n. 268), 26–27 figs 59–60; Werner (n. 268), 7–30, 52–5, figs 1–18, 39–41.

270 S. Lloyd and J. Mellaart, *Beycesultan II: Middle Bronze Age Architecture and Pottery* (London, 1965), 54–6 fig. A.24 pl. 29 b.

271 Sinos (n. 268), 30-2, figs 72–4, 79–80.

272 C.W. Blegen, J.L. Caskey and M. Rawson, *Troy III: The Sixth Settlement* (Princeton, 1953), 219–29 fig. 456.

273 W.-D. Niemeier, 'The Mycenaean Potters' Quarter at Miletus', in: Laffineur and Betancourt (n. 79), 347–51.

274 Ibid., pls CXLIII-CXLVa.

275 Examples: J.L. Caskey, 'Excavations at Lerna 1955', *Hesperia* 25 (1956), 158 pl. 41a (Middle Helladic); C.W. Blegen, C.W. Rawson, Lord W. Taylour and W.P. Donovan, *The Palace of Nestor at Pylos in Western Messenia* III (Princeton, 1973), 19–20 figs 44–5, 307–8 (LH I-IIA); A. Akerström, 'A Mycenaean Potter's Factory at Berbati near Mycenae', in: *Atti e memorie del Primo Congresso Internazionale di Miceneologia, Roma 27 settembre - 3 ottobre 1967* (Rome, 1968), Vol. I, 49, pl. 1.1; id., *Berbati 2: The Pictorial Pottery* (Stockholm, 1987), plan on p. 141 (LH II-IIIA:1); A. Frödin and A.W. Persson, *Asine: Results of the Swedish Excavations 1922–1930* (Stockholm, 1938), 67, 87 fig. 66; A. Keramopoullos, 'Anaskaphai tou anaktorou tou Kadmou en Thebais', *PAE* (1911), 148–9; id., 'Anaskaphe tou anaktorou tou Kadmou en Thebais', *PAE* (1927), 33 fig. 1(LH IIIB).

276 A. Erkanal and H. Erkanal, 'Vorbericht über die Grabungen 1979 im prähistorischen Klazomenai/Limantepe', *Hacattepe Üniversitesi Edebiyat Fakültesi Dergisi* 1983, 165–6 fig. 23.

277 T. Özkan and H. Erkanal, *Tahtali Dam Area Salvage Project* (Izmir, 1999), 137–8, 199 fig. 40.

278 See supra with n. 78.

279 J. Kleine, 'Milet: Bericht über die Arbeiten im Südschnitt an der hellenistischen Stadtmauer', *Ist. Mitt.* 29 (1979), 111–5 figs 1–2, pl. 27.

280 The only Aegean Bronze Age site from which more kilns are known is the LM IIIB potters' quarter at Gouves, where as yet nine kilns have been excavated: D. Vallianou, 'The Potters' Quarter in LM III Gouves', in: Laffineur and Betancourt (n. 79), 334–43.

281 For the proof by NAA analyses of local production of Mycenaean decorated pottery at Miletus see M. Akurgal, M. Kerschner, H. Mommsen and W.-D. Niemeier, *Töpferzentren der Ostägäis* (Ergänzungshefte zu den Jahresheften des Österreichischen Archäologischen Institutes, Heft 3; Vienna, 2002), 25–8, 95–6. Analyses executed by K. Gödecken unfortunately remain unpublished - see ead., 'A Contribution to the Early History of Miletus: The Settlement in Mycenaean Times and its Connections Overseas', in: French and Wardle (n. 21), 307–15.

282 Gödecken (n. 281), 310-2.

283 W. Voigtländer, 'Milets Beziehungen zur Argolis in spätmykenischer Zeit', in: W. Müller-Wiener (ed.), *Milet 1899–1980: Ergebnisse, Probleme und Perspektiven einer Ausgrabung, Kolloquium in Frankfurt am Main 1980* (Ist. Mitt. Supp. 31; Tübingen, 1986), 21–3.

284 J.-C. Courtois, 'Sur diverses groupes de vases mycéniens en méditerranée oriental (1250-1150 av. J.-C.)', in: V. Karageorghis (ed.), *Acts of the International Archaeological Symposium 'The Mycenaeans in the Eastern Mediterranean', Nicosia 27th March - 2nd April 1972* (1973), 138–65.

285 Niemeier and Niemeier (n. 80), 219–20 fig. 33.

286 Cf. Mountjoy (n. 12), 88 no. 216, 98 nos. 218, 223, 225.

287 *CMS* V Supp. 3.2, no. 481. For this group see J.G. Younger, 'The Island Sanctuaries Group: Date and Significance', in: I. Pini (ed.), *Studien zur minoischen und helladischen Glyptik; Beiträge zum 2. Marburger Siegel-Symposium, 26.-30. September 1978* (CMS Supp. 1; Berlin, 1981), 263–71; id., 'The Sealstones', in: C. Renfrew, *The Archaeology of Cult: The Sanctuary at Phylakopi* (BSA Supp. 18; London, 1985), 290-4; id., 'Aegean Seals of the Late Bronze Age: Stylistic Groups, VI', *Kadmos* 26 (1987), 61–4. For the motif cf. *CMS* I no. 26; V no. 499; V Supp. 1B, nos. 38, 84; VII no. 250; XIII no. 59.

288 Since the 'Island Sanctuaries Group' is of LH IIIA:2–IIIB date – see Younger 1985 (n. 287), 292–3; id. 1987 (n. 287), 63 – and the seal was found in the dumps of the excavations of the beginning of the 20th century, it can come from Miletus V or VI.

289 For advice and references I would like to thank Th.G. Palaima.

290 See M. Ventris and J. Chadwick, *Documents in Mycenaean Greek* (2nd edn; Cambridge, 1973), 41, fig. 9; J.T. Hooker, *Linear B: An Introduction* (Bristol, 1980), 38.

291 Cf. the sign *-zo-* written by hands 103 and 141 at Knossos: J.-P. Olivier, *Les scribes de Cnossos: essai de classification des archives d'un palais mycénien* (Rome, 1967), pls IV, XLII, and in the painted inscription TH Z 857 on a stirrup jar from Thebes: A. Sacconi, *Corpus delle iscrizioni vascolari in Lineare B* (Rome, 1974), 195.

292 I would like to thank M.J. Mellink for drawing my attention to this fact; see U. Seidl, *Boğazköy-Hattuša VIII: Gefässmarken von Boğazköy* (Berlin, 1972), 60-1 fig. 23 B 30-34.

293 Sacconi (n. 291), 199 TH Z 846.

294 J. Raison, *Les vases à inscriptions peintes de l'âge mycénien et leur contexte archéologique* (Incunabula Graeca XIX; Rome, 1968); H.W. Catling, J.F. Cherry, J.F. Jones and J.T. Killen, 'The Inscribed Stirrup

Jars and West Crete', *BSA* 75 (1980), 49–113; P.M. Day and H.W. Haskell, 'Transport Stirrup Jars as Evidence of Trade in Late Bronze Age Greece', in: C. Gillis, Ch, Risberg and B. Sjöberg (eds), *Trade and Production in Premonetary Greece: Aspects of Trade, Proceedings of the Third International Workshop, Athens 1993* (Jonsered, 1995), 87–107.

295 The three smaller rooms on the eastern side, the walls of which are given in contour drawing since no stone plan of them exists, were already excavated early in the 20th century: see A. von Gerkan, *Milet I.8: Kalabaktepe, Athenatempel und Umgebung* (Berlin, 1925), 74–5 figs 41–2, plan on pl. 7.

296 Hiesel (n. 264), 111–45, 205–9.

297 Barber (n. 46), 230-32 fig. 154.

298 North-West Building and Building P: N Cucuzza, 'The North Sector Buildings of Haghia Triada', in: J. Driessen and A. Farnoux (eds), *La Crète mycénienne: Actes de la Table Ronde Internationale organisée par l'École francaise d'Athènes, 26–28 Mars 1991* (BCH Supp. 30; Athens and Paris, 1997), 75–84; V. La Rosa, 'Haghia Triada à l'époque mycénienne: L'utopie d'une ville capitale', ibid., 258–9, 540 pl. II.

299 House He: F. Oelmann, 'Ein achäisches Herrenhaus auf Kreta', *JdI* 27 (1912), 38–51 fig. 3; G. Cadogan, 'Gournia', in: J.W. Myers, E.E. Myers and G. Cadogan, *The Aerial Atlas of Ancient Crete* (London, 1992), 105, 111 fig. 13.7. The doubts about a Bronze Age date of House He expressed by S. Hood, 'The 'Country House' and Minoan Society', in: Krzyszkowska and Nixon (n. 77), 133, quoted by Cadogan, op.cit., 105, can now be dispelled due to the reference to finds of clear Late Bronze Age date (for instance stirrup jars) from the building in the excavation note books: V. Fotou, *New Light on Gournia: Unknown Documents of the Excavation at Gournia and other Sites on the Isthmus of Hierapetra by Harriet Ann Boyd* (Aegaeum 9; Liège and Austin, 1993), 95–6.

300 W. Schiering, W. Müller and W.-D. Niemeier, 'Landbegehungen in Rethymnon und Umgebung', *AA* (1982), 50-3 figs 49, 53–8.

301 Gödecken (n. 281), pl. 19f.

302 Mentioned by French (n. 262), 181.

303 Th. Wiegand, *Sechster vorläufiger Bericht über die von den Königlichen Museen in Milet und Didyma unternommenen Ausgrabungen* (Abhandlungen der Berliner Akademie, 1908) 9; D. Fimmen, *Die kretisch-mykenische Kultur* (2nd edn; Leipzig and Berlin, 1924), 16.

304 Cf. Furumark (n. 22), 202; F. Stubbings, *Mycenaean Pottery from the Levant* (Cambridge, 1951), 23.

305 Cf. Mee (n. 9), 133; L. Re, 'Presenze micenee in Anatolia', in: Marazzi, Tusa and Vagnetti (n. 19), 351; Y. Ersoy, 'Finds from Menemen/ Panaztepe in the Manisa Museum', *BSA* 83 (1988), 81 n. 197.

306 A. Greifenhagen, *Staatliche Museen Berlin, Preussischer Kulturbesitz, Antikenabteilung, Schmuckarbeiten in Edelmetall I: Fundgruppen* (Berlin, 1970), 27, pl. 7.1–4; W.-D. Heilmeyer *et al.*, *Antikenmuseum Berlin: Die ausgestellten Werke* (Berlin, 1988), 24–5 nos. 1–16.

307 Seven Mycenaean vases from the Değirmentepe cemetery were presented in 1982 in an exhibition: E. Rohde, *Troja und Thrakien: Ausstellung Berlin und Sofia* (Berlin, 1982), 44–6, figs 80, 83–4, 86–9, 92–3.

308 On Mycenaean chamber tombs see W. Cavanagh and Ch. Mee, *A Private Place: Death in Prehistoric Greece* (Jonsered, 1998), 48–9, 65–9, 92–3.

309 See ns 304–305.

310 For the type see R. Higgins, G*reek and Roman Jewellery* (2nd edn; London 1980), 80 type 6 fig. 13; A. Xenaki-Sakellariou, *Oi thalamatoi taphoi ton Mykenon anaskaphes Chr. Tsounta (1887–1898)* (Paris, 1985), 298 no. 59; M. Effinger, *Minoischer Schmuck* (Oxford, 1996), 38, 'Volutenförmige Reliefperlen, Variante B'. Examples from the Argolid: A.J.B. Wace, *Chamber Tombs at Mycenae* (Oxford, 1932), 10 no. 29k pl. XIIIA. Xenaki-Sakellariou, op. cit., 112 no. 2396, pl. 28, 185 no. 2811(6) pl. 79, 198 no. 2929(2) pl. 86, 214 no. 267 no. 2955 pl. 99, 267 no. 4550(2) pl. 132; A.W. Persson, *The Royal Tombs at Dendra near Midea* (Lund, 1931), 104 no. 33, 105 fig. 80; C.W. Blegen, *Prosymna: The Helladic Settlement Preceding the Argive Heraeum* (Cambridge, 1937), 305 figs 116.12, 135.1, 363.1. Examples from from Attika: H. Lolling, *Das Kuppelgrab bei Menidi* (Athens, 1880), pl. IV.6.10; B. Haussolier, 'Catalogue descriptif des objets découvertes a Spata', *BCH* 2 (1878), 195 pl. XV.13; S.E. Iakovidis, *Perati: to nekrotafeion, B: genikai paratereseis* (Athens, 1970), 305 fig. 128.21. Examples from Thessaly (Megalo Monastirion): D.R. Theocharis, *A. Delt.* 19 (1964) B', 258 pl. 303 b. This type also exists in gold leaf. The examples of this type found nearest to Miletus are two gold leaf specimens from the Mycenaean cemetery of Ialysos on Rhodes: M. Benzi, *Rodi e la civiltà micenea* (Rome, 1992), 186, 203, 240, pls 116.i, 182.i.

311 For the type see Xenaki-Sakellariou (n. 310), 303–4 type 87 b; Effinger (n. 310), 37 'Rosettenförmige Reliefperlen, Variante B'. Examples from the Argolid: Xenaki-Sakellariou (n. 310), 65 no. X 2302(6) pl. 6, 69 no. X 2291 pl. 9; 171 no. X 2791 pl. 70 (Mycenae); Persson (n. 310), 40 no. 2, pl. XVIII; from Rhodes: F.H. Marshall, *Catalogue of Jewellery, Greek, Etruscan, and Roman, in the Department of Antiquities, British Museum* (London, 1911), 807–13, pl. 8; H. Hoffmann and V. von Claer, *Museum für Kunst und Gewerbe Hamburg: Antiker Gold- und Silberschmuck* (Mainz, 1968), 3–4 nos 1–2; Benzi (n. 310), 190, 294 no. 28/24, pl. 119, 301–2 nos. 31/31 C, 31/34 pls 120.h.l

312 Of the type known from different sites in the Greek mainland (Brauron, Perati, Gla, Paralimni-Teichos Dymaion), Crete (Phaestos), Aegean islands (Naxos, Melos?, Astypalaea) as well as from the Uluburun and Cape Gelidonya shipwrecks – see J. Powell, *Fishing in the Prehistoric Aegean* (Jonsered, 1996), 118–20.

313 The spearheads belong to groups C and G of O. Höckmann, 'Lanze und Speer im spätminoischen und mykenischen Griechenland', *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 27 (1980), 22–5, 47–55, figs 3, 9–10; the arrowheads to type VIIc of H.-G. Buchholz, 'Der Pfeilglätter aus dem VI. Schachtgrab von Mykene und die helladischen Pfeilspitzen', *JdI* 22 (1962), 26–7, figs 14h-m, 15a-g, having parallels in the Near East. There are swords (see **Fig. 39** left) of type F of N.K. Sandars, 'Later Aegean Bronze Swords', *AJA* 67 (1963), 133–7 pl. 25. Other swords of non-Mycenaean type are discussed *infra*.

314 Furumark (n. 22), 175–6, fig. 11; Benzi (n. 310), pls 2d-e, 3b-c, 4d-g, 5a, 11h-i, 33d-f, 37h-u, 38a-b, 50g-h, 54l, 55a-b, 60l-n, 70g, 74b-c, 79g, 82e-i, 88c, 90c, 95f-g, 99c, 107c, m.

315 S. Dietz, *Lindos IV.1: Excavations and Surveys in Southern Rhodes: The Mycenaean Period* (Copenhagen, 1984), 29 fig. 13, 44–5 fig. 44; 56 fig. 61, 75 fig, 92; Benzi (n. 310), pls 131h, 136b, 137d, 138h, 140m, 144a, 146h-l, 147p, 149c, 150b.

316 Morricone (n. 203), 177 fig. 63, 187 fig. 72, 205 figs 106–7.

317 Cavanagh and Mee (n. 308), 68–9, 75–6. Cavanagh and Mee, ibid., 77 and Benzi (n. 249), 948 interpret the architecture of the chamber tombs in the southeastern Aegean, their sudden increase in LH IIIA:2 and the treatment of the dead buried in them as evidence for the presence of Mycenaean colonists.

318 R. Hope Simpson, *Mycenaean Greece* (Park Ridge, 1981), 193–9; Mee 1982 (n. 19), 8–30; Dietz (n. 314), passim; M. Benzi, 'Mycenaean Rhodes: a Summary', in: Dietz and Papachristodoulou (n. 176), 59–72; id. (n. 310) 209–22, 227–31.

319 L. Morricone, 'Eleona e Langada: Sepolcreti della tarda Età del Bronzo a Coo', *ASAtene* 43–44 (1965–66), 5–311; I. Papachristodoulou, *A. Delt.* 34 (1979) B', 458; L. Papazoglou, 'Mycenaean Chamber Tomb at Kastello on Kos', *AAA* 14 (1981), 62–75.

320 H.W. Catling, *AR* 1983–84, 70.

321 E. Zervoudaki, *A. Delt.* 26 (1971) B', 550-551; Ch. Doumas, *A. Delt.* 30 (1975) B', 372.

322 N. Zaphiropoulos, *A. Delt.* 16 (1960), 249.

323 Y. Boysal, 'New Excavations in Caria', *Anadolu* 11 (1967), 33–9; Mee (n. 9), 137–42; id. 1998 (n. 19), 138–9; C. Özgünel, 'Selçuk arkeolojii müzesinde saklanan miken pyxisi ve düsündürdükleri', *Belleten* 51 (1987), 535–47. The cemetery was much larger than the 48 chamber tombs excavated – see G.F. Bass in: Cline and Harris-Cline (n. 19), 147–8.

324 In the summer of 2002 I saw in the Milas museum a group of Mycenaean burial gifts (23 clay vessels of the periods LH IIIA:2–IIIB, faience beads, a serpentine lentoid etc.) according to the description coming from a chamber tomb of Mycenaean type excavated during road work at Pilavtepe, 10km from Milas on the road to Bodrum.

325 As discussed *supra*, Minoans had settled on Kasos, Karpathos and Samos from the Old Palace period on. As demonstrated by Melas (n. 198), 176–81, the Minoans constituted until the end of the Bronze Age the major element on the three islands. Thus these differ from the other Minoan colonies in the south-eastern Aegean which were absorbed in the Mycenaean *koine.* In the Late Bronze Age, chamber tombs occur both in the Greek mainland and in Crete; there is, however, some evidence that the type originated in Crete and was possibly transmitted via the Minoan colony on Kythera to the Greek mainland - see I. Pini, *Beiträge zur minoischen Gräberkunde* (1968), 36–41; Niemeier 1985 (n. 19), 204–11. The LM IIIA:1 finds from the chamber tombs of Makelli and Arkasa and Vonies on Karpathos are almost purely Minoan. In LM IIIA:2–B, when the tombs continue in use, there is some Mycenaean pottery, but there is still a distinct

Minoan bias – see A. Charitonidis, 'Thalamoeidis taphos Karpathou', *A. Delt.* 17 (1961–62), 32–76; O. Zachariadou, 'Thalamoeidis taphos stin Arkasa Karpathou', *A. Delt.* 33 (1978) A', 249–95; Melas (n. 198), 28, 39–40, 52–4, 70-5; Mee 1988 (n. 21) 301–2.

326 Settlement: M. Benzi, 'Mycenaean Pottery Later than LH IIIA1 from the Italian Excavations at Trianda on Rhodes', in: Dietz and Papachristodoulou (n. 176), 41–2 fig. 18, p. 53; Papazoglou-Manioudaki (n. 196), 181 fig. 86b. Cemetery: Mee 1982 (n. 19), 20, 26, 44; Dietz (n. 315), 49 fig. 50, 56 fig. 60; Benzi (n. 310), 165–9 pls 18c-e, 30h-i, 39m-n, 62f-g, 72b, 91g-h, 148l.

327 French (n. 262), 180.

328 Morricone (n. 319), 128 fig. 111, 235 fig. 265, 249 fig. 275.

329 Iasos: M. Benzi, 'Mycenean Figurines from Iasos, *PP* 54 (1999), 269–82; Samos: E. Homann-Wedeking, 'Samos 1963', *AA* (1964), 226 fig. 10.

330 See, for instance, Benzi (n. 249), 973–4 for the differences between Kos and Rhodes.

331 Iasos where much LH IIIA:2–C pottery – see M. Benzi, 'I micenei a Iasos', in: *Studi su Iasos in Caria: venticinque anni di scavi della Missione Archeologica Italiana* (B. d. A. Supp. to nos. 31–32; Rome, 1987), 29–34; Mee 1998 (n. 19), 139 – has been found, probably was another Mycenaean settlement in this area. Unfortunately the relevant levels were found much disturbed. The current study of the Mycenaean material from Iasos by M. Benzi, P. Graziadio and I. Morabito will contribute to our understanding of the Mycenaean presence at Iasos.

332 See in general Mee (n. 9), passim; id. 1998 (n. 19), 138–41; E.B. French, 'Turkey and the East Aegean', in: Zerner, Zerner and Winder (n. 204), 155–8; C. Özgünel, *Mykenische Keramik in Anatolien* (Asia Minor Studien vol. 23; Bonn, 1996), 1–8.

333 Thanks to the director of the excavation, Z. Mecangöz, in the summer of 2002, together with M. Kerschner, I was able to see the Mycenaean and Protogeometric pottery found recently at this site.

334 J. Mellaart, 'Anatolian Trade, Geography and Culture', *Anat. Stud.* 18 (1968), 188; W. Alzinger, *Die Ruinen von Ephesos* (1972), 22 Abb. 10; W. Alzinger and D. Knibbe, *Ephesos* (1972), 7 fig. 3a; R. Fleischer, in: A. Bammer, R. Fleischer and D. Knibbe, *Führer durch das archäologische Museum in Selçuk-Ephesos* (Vienna, 1974), 88–9; Mee (n. 9), 132.

335 Ayasuluk Hill: H. Gültekin and M. Baran, 'The Mycenaean Grave Found at the Hill of Ayasuluk', *Türk. Arg. Derg.* 13.2 (1964), 125–33, figs 1–6; M.J. Mellink, *AJA* 68 (1964), 157–8, pl. 50.11–3; Mee 1978 (n. 9), 12; M. Büyükkolancı, in: F. Krinzinger (ed.), *Die Ägäis und das westliche Mittelmeer. Beziehungen und Wechselwirkungen 8. bis 5. Jh.v.Chr., Akten des Kongresses Wien 1999* (Vienna, 2000), 39, 42 fig. 13. Artemision: A. Bammer, 'Les sanctuaires des VIIIe et VII siècles à l'Artemision d'Ephèse', *RA* 1991, 72, figs 16–17.; W.-D. Niemeier, in: Akurgal *et al.* (n. 281), 96 nos 9–10, figs 9–10.; M. Kerschner, in: B. Rückert and F. Kolb (ed.), *Probleme der Keramikchronologie des südlichen und westlichen Kleinasien in geometrischer und archaischer Zeit, Internationales Kolloquium, Tübingen 24.3.-26.3. 1998* (Bonn, 2003), 45–6, fig. 3 (from the Artemision). A terracotta head and a bronze double axe from the Artemision, which have inspired belief that the sanctuary of Ephesian Artemis may have had a Bronze Age precursor – see references by R. Hope Simpson, 'The Dodecanese and the Ahhiyawa Question', *BSA* 98 (2003) 212 n. 23 – were found next to a wall dated to the 7th century BC – see M. Kerschner, 'Ein stratifizierter Opferkomplex des 7. Jhs.v.Chr. aus dem Artemision von Ephesos', *ÖJh* 66 (1997) Beiblatt, 85–106; M. Weissl, 'Grundzüge der Bau- und Schichtenfolge im Artemision von Ephesos', *ÖJh* 71 (2002), 329–331 – and are apparently not of Bronze Age date – for the double axe see G. Klebinder-Gauss, 'Zwei bronzene Doppeläxte aus dem Artemision von Ephesos', *ÖJh* 72 (2003), 133–40.

336 A. Bammer and U. Muss, *Das Artemision von Ephesos* (Mainz, 1996), 26.

337 H. Goldman, 'Excavations of the Fogg Museum at Colophon', *AJA* 27 (1923), 68.

338 R. Meric and P.A. Mountjoy, 'Mycenaean Pottery from Bademgedigi Tepe (Puranda) in Ionia: A preliminary report', *Ist. Mitt.* 52 (2002) 79–98.

339 Özkan and Erkanal (n. 277), 112, figs 11–12.

340 Mycenaean pottery of phases LH IIIA:2–B, most of it local and similar to the local Mycenaean pottery of Miletus, but also some imports, probably from the Argolid, were found in a pit. I am grateful to H. Erkanal who showed me these finds in August 2003 and gave permission to mention them here.

341 M.J. Mellink, 'Archaeology in Asia Minor', *AJA* 72 (1968), 134.

342 Mee (n. 9), 125; Y. Ersoy, *Klazomenai Myken Keramigi* (1983); L. Papazoglou-Manioudaki, in: *Das Mykenische Hellas, Heimat der Helden Homers* (Athens, 1988), 166–7, no. 126; S. Günel, 'Vorbericht über die mittel- bis spätbronzezeitliche Keramik vom Liman Tepe', *Ist. Mitt.* 49 (1999), 60-2, 80-2, nos 52–5, fig. 21, pl. 14.6–8.

343 E. Akurgal, 'Erster vorläufiger Bericht über die Ausgrabungen in Alt-Smyrna', *Ankara Üniversitesi Dil ve Tarih-Cografya Fakültesi Dergesi* 8.1 (1950), 87 fig. 2; J. Cook, 'Archaeology in Greece, 1951', *JHS* 72 (1952), 104, 105, fig. 10; M.J. Mellink, 'Archaeology in Asia Minor', *AJA* 77 (1973), 178; Mee (n. 9), 142–3. More recent finds of Mycenaean pottery were kindly shown to me by E. Akurgal when I visited the site in 1988.

344 Y.E. Ersoy, 'Finds from Menemen/Panaztepe in the Manisa Museum', *BSA* 83 (1988), 60, 71–4, fig. 6, pl. 83; S. Günel, *Panaztepe II: Die Keramik von Panaztepe und ihre Bedeutung für Westkleinasien und die Ägäis im 2. Jahrtausend* (Ankara, 1999), 36–7, 174–5, pls 130-4, 137–40, 167–77.

345 F. Sartiaux, 'Nouvelles recherches sur le site de Phocéee', *CRAI* 1921, 122. New finds of Mycenaean pottery were announced by the Turkish press in the summer of 2002.

346 J. Boehlau and K. Schefold, *Larisa am Hermos III. Die Kleinfunde* (Berlin, 1942), 169 pl. 57,1; Mee (n. 9), 132.

347 Y. Boysal, 'New Excavations in Caria', *Anadolu* 11 (1967), pl. 22; G.M.A. Hanfmann and J.C. Waldbaum, 'Two Submycenaean Vases and a Tablet from Stratonikeia in Caria', *AJA* 72 (1968), 52; Mee (n. 9), 125.

348 Mellaart (n. 334), 188.

349 M.J. Mellink, 'Archaeology in Asia Minor', *AJA* 67 (1963), 189; J. Cook and D. Blackman, 'Greek Archaeology in Western Asia Minor', *AR* 1964/65, 36 (settlement). K. Bittel, in: *Kleinasien und Byzanz. Gesammelte Aufsätze zur Altertumskunde und Kunstgeschichte* (Istanbuler Forschungen 17; Berlin, 1950), 21 pl. 5; E. Vermeule and V. Karageorghis, *Mycenaean Pictorial Vase Painting* (Cambridge, 1982), 228 no. XIII.8 (cemetery).

350 M.A. Basedow, *Beşik-Tepe. Das spätbronzezeitliche Gräberfeld* (Mainz, 2000), 56–69, pls LXXII-LXXVI, LXXIX-LXXX, LXXXII, LXXXIV no. 93.3–4,6, CXII-CXIV.

351 W. Dörpfeld, *Troja und Ilion: Ergebnisse der Ausgrabungen in den vorhistorischen und historischen Schichten von Ilion 1870-1894* (Athens, 1902), 283–87 figs 168–81, p. 288, pl. 39.I-III; H. Schmidt, *Heinrich Schliemann's Sammlung trojanischer Altertümer* (Berlin, 1902), 164–6, nos 3386–485; C.W. Blegen, J.L. Caskey and M. Rawson, *Troy III. The Sixth Settlement* (Princeton, 1953), pls 383, 402–22; C.W. Blegen, C.G. Boulter, J.L. Caskey and M. Rawson, *Troy IV. Settlements VIIa, VIIb and VIII* (Princeton, 1958), pls 243–8. 276–9; Mee (n. 9), 146–7; M. Korfmann, 'Troia – Reinigungs- und Dokumentationsarbeiten 1987, Ausgrabungen 1988 und 1989', *Studia Troica* 1 (1991), 26, fig. 28, pls 3–4; id., 'Die prähistorische Besiedlung südlich der Burg', *Studia Troica* 2 (1992), 127–8, fig. 3; id, 'Troia – Ausgrabungen 1992', *Studia Troica* 3 (1993), 26, pl. 2.3; P. Jablonka, H. König and S. Riehl, 'Ein Verteidigungsgraben in der Unterstadt von Troia VI, Grabungsbericht 1993', *Studia Troica* 4 (1994), 64–5, 68; P. Jablonka, 'Ausgrabungen südlich der Unterstadt von Troia im Bereich des Troia VI-Verteidigungsgrabens, Grabungsbericht 1994', *Studia Troica* 5 (1995), 70-6 figs 27, 36–8, 40; P.A. Mountjoy, 'Local Mycenaean Pottery at Troia', *Studia Troica* 7 (1997), 259–67, figs 1–11; ead., 'A Trojan Mycenaean Pictorial Krater', ibid., 269–74, figs 1–5; ead., 'Troia Phase VIf and Phase VIg: The Mycenaean Pottery', ibid., 275–94, figs 3–7, 9–10; ead., 'The Destruction of Troia VIh', *Studia Troica* 9 (1999), 253–93 , figs 2, 4, 7–12; ead., 'Troia VII Reconsidered', ibid., 295–346 figs 2.2–12, 3.15, 6.22, 7.31, 8.32,34–9, 9.40, 10.43, 13.50-1, 14.58, 17.60, 18.63, 20.70; H. Mommsen, D. Hertel and P.A. Mountjoy, 'Neutron Activation Analysis of the Pottery from Troy in the Berlin Schliemann Collection', *AA* (2001), 170-1, 181–94 figs 14–9.

352 Hope Simpson (n. 318), 206; S. Hood, *Excavations in Chios 1938–1955: Prehistoric Emporio and Ayia Gala I* (BSA Supp. 16; London, 1981), 582–3 fig. 260 pl. 117.

353 L. Achilara, 'Mycenaean Events from Psara', in: de Miro, Godart and Sacconi (n. 208), 1349–53, pls 1–2. In October 2002 I saw in the Archaeological Museum of Chios an exhibition on the recent excavations in the Bronze Age cemetery of Archontiki on Psara. According to the information given, in 1997–99 more than 50 tombs, most of them cist tombs, but also some built chamber tombs – see N. Papadimitriou, *Built Chamber Tombs of Middle and Late Bronze Age*

Date in Mainland Greece and the Islands (Oxford, 2001), 143–6 figs 66–7 – were excavated. The Mycenaean pottery is mostly of LH IIIA:2–IIIB date (with little LH IIIC material).

354 W. Lamb, 'Excavations at Thermi', *BSA* 31 (1930/31), 161–6, 170-1; ead., *Excavations at Thermi on Lesbos* (Cambridge, 1936), 142, fig. 42; V.R. Desborough, *The Last Mycenaeans and Their Successors. An Archaeological Survey c.1200–c. 1000 B.C.* (Oxford, 1964), 159–60; H.-G. Buchholz, *Methymna. Archäologische Beiträge zur Topographie und Geschichte von Nordlesbos* (Mainz, 1975) 135–6 nos G1–8, fig. 35 pl. 14d-i, 15c; N. Spencer, 'Early Lesbos between East and West: A 'Grey Area' of Aegean Archaeology', BSA 90 (1995), 273 n. 22.

355 L. Bernabò-Brea, *Poliochni. Città preistorica nell'isola di Lemnos* II (Rome, 1976), 338, pl. CCLXXXIIIj; M. Cultraro, in: M.C. Martinelli and U. Spigo, *Studi di Preistoria e Protostoria in onore di Luigi Bernabò Brea* (Quaderni del Museo Archeologico Regionale Eoliano 'Luigi Bernabò Brea', Supp. I; Palermo, 2001), 228, 225, fig. 6.4 (Poliochni); F. Schachermeyr, 'Forschungsbericht über die Ausgrabungen und Neufunde zur ägäischen Frühzeit', *AA* (1962), 304; Boulotis (n. 51), 267; Davis, Tzonou-Herbst and Wolpert (n. 196), 86 (Koukonisi); G. Messineo, 'Gli scavi di Efestia a Lemno. Tradizione micenea nella civiltà tirrenica', *SMEA* 39 (1997), 241–8, figs 4–5 (Hephaistia). This Mycenaean pottery came from later contexts at Hephaistia. In 2003 Mycenaean pottery was found in a Late Bronze Age level (pers. comm. E. Greco)

356 Davis, Tzonou-Herbst and Wolpert (n. 196), 86.

357 Günel (n. 262), 445–9 fig. 1 pl. 66.1–4; H. Erkanal, M. Artzy and Ou. Kouka, 'Liman Tepe', in: *XXIX Kazı Sonuçları Toplantısı* I (Ankara, 2002), 436, fig. 7.

358 Boulotis (n. 51), 267, 265 fig. 28.

359 V.E.G. Kenna, *Cretan Seals; with a Catalogue of the Minoan Gems in the Asmolean Museum* (Oxford, 1960), 141 n. 375 pl. 14.

360 A. Erkanal-Öktü, 'Überblick über die Siegelfunde von Bakla Tepe, Liman Tepe und Panaztepe', in: W. Müller (ed.), *Minoisch-mykenische Glyptik: Stil, Ikonographie, Funktion* (CMS Supp. 6; 2000), 76–7, fig. 7; *CMS* V, Supp. 3.2, no. 456.

361 Erkanal-Öktü (n. 360), 75, 70 fig. 2g; *CMS* V, Supp. 3.2, no. 460.

362 Erkanal-Öktü (n. 360) 67–71, fig. 2a-f; *CMS* V, Supp. 3.2, nos 461–71.

363 I. Pini, 'Zu den Siegeln der Beşik-Nekropole', *Studia Troica* 2 (1992) 157–63 figs 1–5; *CMS* V, Supp. 1B, nos 474–7.

364 M. Korfmann, 'Troia – Ausgrabungen 1995', *Studia Troica* 6 (1996), 36, pl. 2.2.

365 Lentoids of carnelian, serpentine and glass were to be seen in the exhibition mentioned in n. 353.

366 D. Mustilli, 'La necropolis tirrenica di Efestia', *ASAtene* 15–16 (1932–33), 80, cinerario CLXXXII, no. 1, p. 79 figs 126–7.

367 Özkan and Erkanal (n. 277), 112.

368 Günel 1999 (n. 344), 171.

369 Jewellery of gold, carnelian and faience was to be seen in the exhibition menioned in n. 353.

370 Özkan and Erkanal (n. 277), 112 figs 13–4.

371 Blegen *et al*. 1953 (n. 351), 263 fig. 304 no. 35–508.

372 K. Bittel and A.M. Schneider, 'Archäologische Funde aus der Türkei', *AA* (1943), 202, 208 fig. 3; N.K. Sandars, 'The First Aegean Swords and Their Ancestry', *AJA* 65 (1961), 27–8 pl. 19.7.

373 Ersoy (n. 305), 59–60, 61–71, fig. 3 pls 5–7.

374 S. Przeworski, *Die Metallindustrie Anatoliens in der Zeit von 1500 – 700 vor Chr.* (Leiden, 1939), 51–2 pl. 18.5; Sandars (n. 313), 140, 153 pl. 27.52.

375 Basedow (n. 350), 122–3 pls XCV.1, CXIX.5.

376 Swords and daggers of N. Sandars' types D 2 and C 2 were to be seen in the exhibition mentioned in n. 353.

377 See O.T.P.K. Dickinson, 'Cist Graves and Chamber Tombs', *BSA* 78 (1983), 62, who thinks that the cist graves on Psara 'could represent a pre-Mycenaean local tradition'. See also Spencer (n. 354), 275. On the tradition of the cist grave in western Asia Minor going back to the Early Bronze Age see also *supra* with n. 46.

378 A. Erkanal and H. Erkanal, 'A New Archaeological Excavation in Western Anatolia: Panaztepe', *Turkish Review* 1.3 (1986), 71–83. For further references see Mee 1998 (n. 19), 140 n. 46.

379 Basedow (n. 350), 48–52.

380 Hood (n. 352), 152–3 Tomb 3 fig. 83 pl. 29.d-e.

381 S. Charitonidis, 'Psara', *A. Delt.* 17 (1961–62) B', 266 pl. 321; Achilara (n. 353), 1349–53.

382 Spencer (n. 354), 275.

383 Erkanal and Erkanal (n. 378), 70.

384 Blegen *et al.* (n. 272), 370-91 figs 258–77.

385 Basedow (n. 350), 17–44.

386 For the differences from Mycenaean tholos tombs see R.A. Bridges Jr., 'The Mycenaean Tholos Tomb at Kolophon', *Hesperia* 43 (1974), 264–66; Mee 1998 (n. 19), 140. According to Bridges the tholos tomb of Kolophon was built by 'local builders working outside the mainstream of the tholos-tomb tradition'. Mee 'would question whether the construction of circular stone built tombs need imply Mycenaean influence'.

387 Bridges (n. 386), 264–66 pl. 52.

388 Erkanal and Erkanal (n. 378), 69–70; Günel (n. 344), 26, 170-1 colour pl. 4.

389 Built rectangular tombs occur across the Mycenaean world – see Papadimitriou (n. 353), *passim.* Those in the eastern Aegean cited in the following three notes differ, however, in one regard from those on the Greek mainland: they have the entrance on the short side.

390 Özkan and Erkanal (n. 277), 133–7, figs. 8–10.

391 Basedow (n. 350), 45–4, pls III, IX, XXXII-XXXIV, CIX-CX.

392 Papadimitriou (n. 353) 143–6, figs 66–7.

393 Ibid., 145–7.

394 Gültekin and Baran (n. 335), 122–33; Mee (n. 9), 127; id. 1998 (n. 19), 139.

395 Mee 1998 (n. 19), 139.

396 On these see Mellaart and Murray (n. 189), 99–109; Koppenhöfer (n. 189), 281–395.

397 Mee (n. 9), 146.

398 Desborough (n. 22), 159–60.

399 Hood (n. 352), 579–81. Together with the LH IIIB pottery a number of pottery fragments of non-Mycenaean vases with features known from Troy VI-VII were found.

400 T.R. Bryce, 'The Nature of Mycenaean Involvement in Western Anatolia', *Historia* 39 (1989), 1; French (n. 332), 155.

401 This is the impression given by the exhibition mentioned in n. 353. There the only objects of local character were some imitations of Mycenaean pottery shapes in local red and grey-black wares.

402 Ersoy (n. 305), 59, 56–7 figs 1–2.

403 J. Neumann, 'Wind and Current Conditions in the Region of the 'Windy Ilion' (Troy)', *AA* (1986) 345–63; id., 'Number of Days that Black Sea Bound Sailing Ships were delayed by Winds at the Entrance to the Dardanelles near Troy's Site', *Studia Troica* 1 (1991), 93–100; O. Höckmann, 'Zu früher Seefahrt in den Meerengen', *Studia Troica* 13 (2003), 133–60.

404 E. Edel, *Die Ortsnamenlisten aus dem Totentempel Amenophis III* (Bonner Biblische Beiträge 25; Bonn, 1966), 46–50; E.H. Cline, 'Amenhotep III and the Aegean: A Reassessment of Egypto-Aegean Relations in the 14th Century B.C.', *Orientalia* 56 (1987), 1–36; id., *Sailing the Wine Dark Sea: International Trade and the Late Bronze Age Aegean* (Oxford, 1994), 38–42 map 3.

405 B. Jäger and R. Krauss, 'Zwei Skarabäen aus der mykenischen Fundstelle Panaztepe', *Mitteilungen der Deutschen Orientgesellschaft* 122 (1990), 153–6. On the distribution of Egyptian objects inscribed with the name of Amenophis III in the Aegean see Cline 1987 (n. 404) 11–3, map 1; id., 1994 (n. 404), 38–40, map 3.

406 Shown in the Troy exhibition in Stuttgart, Braunschweig and Bonn 2001–2002.

407 G.F. Bass, 'Prolegomena to a Study of Maritime Traffic in Raw Materials to the Aegean during the Fourteenth and Thirteenth Centuries B.C.', in: Laffineur and Betancourt (n. 79), 163–5; C. Pulak, 'The Uluburun Wreck', in: S. Swiny, R.L. Hohlfelder and H.W. Swiny (eds), *Res Maritimae: Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity* (Atlanta, 1997), 240-1.

408 P.A. Mountjoy, 'The East Aegean-West Anatolian Interface in the Late Bronze Age: Mycenaeans and the Kingdom of Ahhiyawa', *Anat. Stud.* 48 (1998), 33–67.

409 Contra ibid., 37. Mountjoy is referring to the unpublished Cambridge dissertation by S. Voutsaki, *Society and Culture in the Mycenaean World: An Analysis of Mortuary Practices in the Argolis, Thessaly and the Dodecanese* (1993), 133.

410 W. Cavanagh, 'Innovation, Conservatism and Variation in Mycenaean Funeral Ritual', in: K. Branigan (ed.), *Cemetery and Society in the Aegean Bronze Age* (1998), 107–110.

411 Benzi (n. 249), 948. The chamber tombs of Aplomata and Kamini on Naxos are of LH IIIC date – see Desborough (n. 22), 150-1; Ch. Kardara, *Naxos* I: *Aplomata Naxou, kineta euremeta tafon A kai B* (1977).

412 H.W. Catling, *Some Problems in Aegean Prehistory c. 1450–1380 B.C.* (Fourteenth J.L. Myres Lecture; Oxford, 1989), 17–9. See also J.C.

Wright, 'From Chief to King in Mycenaean Greece', in: Rehak (n. 183), 72–3; J. Bennet, 'Space through Time: Diachronic Perspectives on the Spatial Organization of the Pylian State', in: Laffineur and Niemeier (n. 89), 587–601; S. Deger-Jalkotzy, 'On the Negative Aspects of the Mycenaean Palace System', in: de Miro, Godart and Sacconi (n. 208), 723–5. For the changes in burial customs see also S. Voutsaki, 'Social and Political Processes in the Mycenaean Argolid: The Evidence from the Mortuary Practices', in: Laffineur and Niemeier (n. 89), 55–63; Cavanagh and Mee (n. 308), 134–5.

413 Benzi (n. 249), 951.

414 M. Benzi, 'Mycenaean Rhodes: a Summary', in: Dietz and Papachristodoulou (n. 176), 61–2; id. (n. 249), 209–12.

415 Mee 1982 (n. 19), 83–5, 87; id. 1988 (n. 21), 301–2; Benzi, in: Dietz and Papachristodoulou (n. 176), 62–4; id., (n. 310), 212–4; id. (n. 249), 970-4.

416 Ventris and Chadwick (n. 290), 156, 410; S. Hiller, '*ra-mi-ni-ja*: Mykenisch-kleinasiatische Beziehungen und die Linear B-Texte', *Ziva Antika* 25 (1975), 398–400; J. Chadwick, 'The Women of Pylos', in: J.-P. Olivier and Th.G. Palaima (eds), *Texts, Tablets and Scribes: Studies in Mycenaean Epigraphy and Economy Offered to Emmett L. Bennett Jr.* (Minos Supp. 10; Salamanca, 1988), 81.

417 Chadwick (n. 416), 79–80, 82, 84, 91; V. Parker, 'Die Aktionen der Mykenäer in der Ostägäis im Lichte der Linear B Tafeln', in: Deger-Jalkotzy, Hiller and Panagl (n. 159), 496–502.

418 Chadwick (n. 416), 91–2.

419 V.L. Aravantinos, L. Godart and A Sacconi, *Thèbes: Fouilles de la Cadmée I: Les tablettes en Linéaire B de la Odos Pelopidou, édition et commentaire* (Pisa, 2001), 68, 203–4: Fq 177, 77, 205–6: Fq 198, 99, 220: Fq 244, 104–5, 224–7: Fq 254+255, 110: Fq 269, 113–4: Fq 276.

420 I am grateful to V.L. Aravantinos and L. Godart for information prior to the publication.

421 Bryce (n. 92), 131–3.

422 S. Heinhold-Krahmer, 'Millawa(n)da', in: *Reallexikon der Assyriologie und Vorderasiatischen Archäologie*, Vol. 8 (Berlin, 1993–97), 188–9.

423 E.O. Forrer, 'Vorhomerische Griechen in den Keilschrifttexten aus Boğazköi', *Mitteilungen der Deutschen Orientgesellschaft* 63 (1924), 1–22; id., 'Die Griechen in den Boğazköi-Texten', *Orientalische Literaturzeitung* 27 (1924), 113–8.

424 See the summary of the debate in W.-D. Niemeier, 'The Mycenaeans in Western Anatolia and the Problem of the Origins of the Sea Peoples', in: Gitin, Mazar and Stern (n. 24), 19–25 with the maps on figs 2–4 showing the locations of Ahhiyawa and Millawanda as proposed by adherents and opponents of Forrer's identification.

425 O. Szemerenyi, 'Hounded out of the Academe...: The Sad Fate of a Genius', in: F. Imparati (ed.), *Studi di storia e filologia anatolica dedicati a Giovanni Pugliese Carratelli* (Florence, 1988), 265–7, 276–9, 285–8.

426 The following is a summary. For a more thorough discussion see Niemeier, forthcoming (n. 24).

427 As to the chronology of the Hittite kings I follow F. Starke, 'Hattuša', in: H. Cancik and H. Schneider (eds), *Der Neue Pauly: Enzyklopädie der Antike*, Vol 5 (Stuttgart, 1998), 191–2.

428 Bryce (n. 92), 135–7; H. Klengel, *Geschichte des hethitischen Reiches* (Handbuch der Orientalistik I.34; 1999), 111.

429 F. Starke, 'Troia im Kontext des historisch-politischen und sprachlichen Umfeldes Kleinasiens', *Studia Troica* 7 (1997), 455.

430 Bryce (n. 92), 133–5.

431 KUB XXVI 91; edited with German translation by F. Sommer, *Die Ahhijava Urkunden* (Munich, 1932), 268–71.

432 Scholars have suggested different Hittite Great Kings from Arnuwanda I to Arnuwanda III – see E.H. Cline, 'Assuwa and the Achaeans: The 'Mycenaean' Sword at Hattušas and its Possible Implications', *BSA* 91 (1996), 146 n. 47 with references.

433 J. Freu, *Hittites et Achéens* (Centre de Recherches Comparatives sur les Langues de la Méditerranée Ancienne, Document X; 1990), 10-1; A. Ünal, 'Two Peoples on Both Sides of the Aegean Sea: Did the Achaeans and the Hittites know each other?', in: Prince T. Mikasa (ed.), *Essays on Ancient Anatolia and Syrian Studies in the Second and First Millennium B.C.* (Bulletin of the Middle Eastern Culture Center in Japan 4; Wiesbaden, 1991), 20 no. 12; S. de Martino, *L'Anatolia occidentale nel Medio Regno ititta* (Florence, 1996), 30-3; Cline (n. 432), 145–7.

434 KUB XIV 1 + Kbo XIX 38; edited with German translation by A. Götze, *Madduwataš* (Mitteilungen der Vorderasiatisch-Ägyptischen Gesellschaft 32; Leipzig, 1927); English translation: G. Beckman, *Hittite Diplomatic Texts* (Atlanta, 1997), 144–151. For the historical evaluation of the document see H.G. Güterbock, 'The Hittites and the Aegean World: Part 1. The Ahhiyawa Problem Reconsidered', *AJA* 87 (1983), 133–4; T.R. Bryce, 'Madduwata and Hittite Policy in Western Anatolia', *Historia* 35 (1986), 13–23; id., 'Ahhiyawans and Mycenaeans - An Anatolian Viewpoint', *OJA* 8 (1989), 298–9; id. (n. 92), 140-7; J. Freu, 'Problèmes de chronologie et de géographie hittite. Madduwata et les débuts de l'empire', *Hethitica* 8 (1987), 123–5; de Martino (n. 433), 39–40, 47–62.

435 A. Götze, *Die Annalen des Mursilis* (Mitteilungen der Vorderasiatisch-Ägyptischen Gesellschaft 38; Leipzig, 1933), 37, Vs I, 23–5; see also Güterbock (n. 434),135; Bryce (n. 92), 209–10.

436 Götze (n. 435), 45–51.

437 Bryce 1989 (n. 434), 299–300.

438 Götze (n. 435), 53–7.

439 J.A. Mellaart, 'Some Reflections on the History and Geography of Western Asia Minor in the Late Fortheenth and Thirteenth Centuries B.C.', *Jahrbuch für kleinasiatische Forschungen* 10 (1986), 220–1; Starke (n. 429), 453.

440 S. Heinhold-Krahmer, 'Untersuchungen zu Piyamaradu (Teil I)', *Orientalia* 52 (1983), 81–97; ead., 'Untersuchungen zu Piyamaradu (Teil II)', *Orientalia* 55 (1986), 47–62; Bryce (n. 92), 244–7, 321–4; Klengel (n. 428), 264–5.

441 Starke (n. 429), 191–2.

442 KUB xiv 3, edited with German translation by Sommer (n. 431), 2–194; translated in part into English by J. Garstang and O.R. Gurney, *The Geography of the Hittite Empire* (London, 1959), 111–4. For the attribution of the letter to Hattusili III/II see Güterbock (n. 434), 135; Heinhold-Krahmer 1983 (n. 440), 95–7; P.H.J. Houwink ten Cate, 'Sidelights on the Ahhiyawa Question from Hittite Vasall and Royal Correspondence', *Jaarbericht van het Voorasiatisch-Egyptische Genootschapt Ex Oriente Lux* 28 (1983–84), 34.

443 R. Ranoszek, review of Sommer (n. 431), *Indogermanische Forschungen* 56 (1938), 38–9; Güterbock (n. 434), 135–6.

444 Starke (n. 429), 191–2.

445 KUB XXIII 13.

446 D.F. Easton, 'Hittite Geography and the Location of Ahhiyawa', paper to the VIth International Colloquium on Aegean Prehistory 1980, unpublished; id., 'Has the Trojan War been found?', *Antiquity* 59 (1985), 189; Güterbock (n. 434), 138; id., 'A New Look at one Ahhiyawa Text', in H. Otten, E. Akurgal, H. Ertem and A. Süel (eds), *Hittite and Other Anatolian and Near Eastern Studies in Honour of Sedat Alp* (Ankara, 1992), 235–43.

447 KUB XIX 55, translated into English by Garstang and Gurney (n. 442), 114–5, + KUB XLVIII 90, joined by H.A. Hoffner, 'The Millawata Letter Augmented and Reinterpreted', in: *Proceedings of the 28th Rencontre Assyriologique Internationale, Vienna 1981* (Archiv für Orientforschung Supp. 19; Horn, 1982), 130-8. On this document see I. Singer, 'Western Anatolia in the Thirteenth Century B.C. According to the Hittite Sources', *Anat. Stud.* 33 (1983), 214–6; T.R. Bryce, 'A Reinterpretation of the Millawata Letter in the Light of the New Join Piece', *Anat. Stud.* 35 (1985), 13–23; id. (n. 92), 339.

448 Hoffner (n. 447), 133; Freu (n. 434), 39–41; O.R. Gurney, 'Hittite Geography: Thirty Years after', in: Otten, Akurgal, Ertem and Süel (n. 446), 220-1 n. 58; Bryce (n. 92) 339–42.

449 Singer (n. 447), 215–6.

450 Starke (n. 429), 454; J.D. Hawkins, 'Tarkasnawa King of Mira, 'Tarkondemos', Boğazköy Sealings and Karabel', *Anat. Stud.* 48 (1998), 19, 28.

451 See the arguments for this identification in Niemeier, forthcoming (n. 24).

452 Bryce 1985 (n. 447), 13–23; id. 1989 (n. 434), 303–4; G.A. Lehmann , 'Die 'politisch-historischen Beziehungen der Ägäis-Welt des 15.-13. Jhs.v.Chr. zu Ägypten und Vorderasien', in: J. Latacz (ed.), *Zweihundert Jahre Homer-Forschung: Rückblick und Ausblick* (Colloquium Rauricum 2; Stuttgart, 1991), 113.

453 KUB XXIII 1; edited with German translation by C. Kühne and H. Otten, *Der Sausgamuwa-Vertrag* (Studien zu den Boğazköy-Texten 16; Wiesbaden, 1971); English translation: Beckman (n. 434), 98–102. For the erasion see Bryce 1989 (n. 434), 304–5.

454 Bryce 1989 (n. 434), 305. See also id. (n. 92) 342–4.

455 See, for instance, the two alternative maps in J.G. Macqueen, *The Hittites and their Contemporaries in Asia Minor* (2nd edn, London, 1986), 38–9, figs 21–2.

456 In his paper 'Troy: A Re-Assessment' at the *IVth International Colloquium on Aegean Prehistory, Sheffield University, April 1977*, the

proceedings of which remain unpublished.

457 J. Mellaart, 'Troy VIA in Anatolian Perspective', in: L. Foxhall and J.K. Davies (eds), *The Trojan War: Its Historicity and Context. Papers of the First Greenbank Colloquium, Liverpool 1981* (Bristol, 1984), 74–84; id., 'Hatti, Arzawa and Ahhiyawa: A Review of the Present Stalemate in Historical and Geographical Studies', in: *Philia Epe eis Georgion E. Mylonan* (Athens, 1986) Vol. I, 74–84; id., 'Some reflections on the history and geography of Western Anatolia in the late fourteenth and thirteenth centuries B.C.', *Anadolu araştirmalari* 10 (1986), 215–30.

458 Starke (n. 429), 447–56. 449 map fig. 1; W.-D. Niemeier, 'The Mycenaeans in Western Anatolia and the Problem of the Origins of the Sea Peoples', in: Gitin, Mazar and Stern (n. 24), 19–20, map fig. 2; id., forthcoming (n. 24); P.W. Haider, 'Troia zwischen Hethitern, Mykenern und Mysern – Besitzt der Troianische Krieg einen historischen Hintergrund?', in: H.D. Galter (ed.), *Troia: Mythen und Archäologie* (Grazer Morgenländische Studien 4; Graz, 1997), 97–140 map on p. 110, fig 1; id. 'Zur historischen Geographie Westkleinasiens im 13. Jh.v.Chr.', in: Friesinger and Krinzinger (n. 197), 665–75, map on pl. 162.3.

459 Hawkins (n. 450), 1–31.

460 S. Heinhold-Krahmer, *Arzawa: Untersuchungen zu seiner Geschichte nach den hethitischen Quellen* (Texte der Hethiter 8; Heidelberg, 1977), 145, 205, 212–3, 338; Singer (n. 447), 206; F. Schachermeyr, *Mykene und das Hethiterreich* (Vienna, 1986), 193; Starke (n. 429), 452–3.

461 Bryce (n. 92), 55.

462 As to relief B and the inscriptions C 1 and C 2 see K. Kohlmeyer, 'Felsbilder der hethitischen Grossreichszeit', *Acta Praehistorica et Archaeologica* 15 (1983), 19–25, figs 4–7, pls 6–7.

463 H.G. Güterbock, 'Das dritte Monument am Karabel', *Ist. Mitt.* 67 (1970), 70; Houwink ten Cate (n. 442), 48, n. 38; O.R. Gurney, 'Hittite Geography: Thirty Years on', in: Otten, Akurgal, Ertem and Süel (n. 446), 221; Starke (n. 429), 451.

464 A. Peschlow-Bindokat and S. Herbordt, 'Eine hethitische Großprinzeninschrift aus dem Latmos, vorläufiger Bericht', *AA* (2001), 363–78.

465 Garstang and Gurney (n. 442), 88; see also J.A. Macqueen, 'Geography and History of Western Asia Minor in the Second Millennium B.C.', *Anat. Stud.* 18 (1968), 175: G. Del Monte and J. Tischler, *Die Orts- und Gewässernamen der hethitischen Texte* (Répertoire Géographique des Textes Cunéiformes, Vol. 6; Wiesbaden, 1978), 27.

466 Büyükkolancı (n. 335), 39, 41 fig. 12. Of interest, in this connection, is also the small bronze group from Ephesos, published by G.M.A. Hanfmann, 'A 'Hittite' Priest from Ephesus', *AJA* 66 (1962), 1–4 pls 1–2.

467 A. Ünal, 'Untersuchungen zur Terminologie der hethitischen Kriegsführung I: 'Verbrennen, in Brand stecken' als Kriegstechnik', *Orientalia* 52 (1983), 168 n. 27; id. 1991 (n. 433), 31; A. Bammer, *Ephesos: Stadt an Fluss und Meer* (Graz, 1983), 136; Starke (n. 429), 451.

468 Heinhold-Krahmer (n. 460), 343–5.

469 For instance by Heinhold-Krahmer, ibid., 345, and most recently by de Martino (n. 433), map following p. 122; Klengel (n. 428), 136 map 5.

470 As already argued by Garstang and Gurney (n. 442), 97; Houwink ten Cate (n. 442), 48, n. 38; H.G. Güterbock, 'Troy in the Hittite Texts? Wilusa, Ahhiyawa, and Hittite History', in: Mellink (n. 163), 41.

471 Starke (n. 429), 451, 454–5, 449 map fig. 1; Hawkins (n. 450), 23–4.

472 KUB XIX 5:3–4; translated by Garstang and Gurney (n. 442), 95.

473 Garstang and Gurney (n. 442), 96; J.D. Muhly, 'Hittites and Achaeans: Ahhiyawa Redomitus', *Historia* 23 (1974), 135; J. Freu, *Luwiya* (Centre des Recherches Comparatives sur les Langues de la Méditerannée ancienne 6/2; 1980), 178; Houwink ten Cate (n. 442), 44; T.R. Bryce, 'The Nature of Mycenaean Involvement in Western Anatolia', *Historia* 39 (1989), 221; Gurney (n. 463), 221; Starke (n. 429), 453; Hawkins (n. 450), 23; Parker (n. 417), 501 n. 57.

474 Garstang and Gurney (n. 442), 101–5; Heinhold-Krahmer (n. 460), 157–78, 350-2.

475 P. Kretschmer, 'Alaksandus, König von Vilusa', *Glotta* 13 (1924), 205–13; Garstang and Gurney (n. 442), 105–7, 120-13; D.L. Page, *History and the Homeric Iliad* (Berkeley, 1959), 102–3, 106; Huxley (n. 22), 33–4; P.H.J. Houwink ten Cate, *The Records of the Early Hittite Empire* (Istanbul, 1970), 62, 72, 77, 80; id. (n. 442), 48 n. 38; E.R. Jewell, *The Archaeology and History of Western Asia Minor during the Second Millennium B.C.* (University of Pennsyslvania Ph.D., 1974), 273, 278–9, 191–296; T.R. Bryce, 'Ahhiyawa and Troy: A Case of Mistaken Identity?', *Historia* 26 (1977), 28–30; id. (n. 92), 394–6; S. Kosak, 'Western Neighbours of the Hittites', *Eretz Israel* 15 (1981), 14*; Singer (n. 447) 215; H.G. Güterbock, in: Mellink (n. 163), 41; Schachermeyr (n. 460), 299; J. Yakar, 'Anatolian Civilization following the Disintegration of the Hittite Empire', *Tel Aviv* 20 (1993), 8; O. Hansen, 'Reflexions on the Bronze Age Topography of NW Anatolia', *Anatolica* 20 (1994), 227–231; de Martino (n. 433), map following p. 122; Starke (n. 429), 454–5, 449 map fig. 1; J.D. Hawkins in: D.F. Easton, J.D. Hawkins, A.G. Sherratt and E.S. Sherratt, 'Troy in Recent Perspective', *Anat. Stud.* 52 (2002), 94–101, 95 map fig. 11. Haider 1997 (n. 458) and id. 1999 (n. 458) locates Wilusa in the valley of river Kaikos/Bakir. For arguments against this suggestion see Niemeier, forthcoming (n. 24).

476 Mellaart 1986 (n. 457), 217; see also Kosak (n. 475), 12*.

477 G. Steiner alone continues to locate Ahhiyawa in western Anatolia – see id., 'Die Ahhijawa-Frage heute', *Saeculum* 15 (1964), 371–6; id., 'Neue Überlegungen zur Ahhijawa-Frage', in: *X. Türk Tarih Kongresi, Ankara, 22–26 Eylül 1986* (Ankara, 1990) Vol. II, 523–30; id., 'Der Titel "Grosskönig" in Anatolien', in: *XII. Türk Tarih Kongresi, Ankara 1994* (Ankara, 1999). His arguments are, however, not convincing. There is no evidence that the charioteer mentioned in the Tawagalwa Letter must have driven his chariot all over land to Ahhiyawa. The restoration on a fragmentary tablet of the title Great King for king Mashuitta of a country to the west of Hatti is uncertain (J.D. Hawkins, letter of 5 June 1998). Moreover, there is no evidence that this king with a Luwian name was king of Ahhiyawa. Hawkins (n. 450) thinks that Mashuitta is likely to be a king of Mira, successor to Tarkasnawa.

478 As pointed out to me by J.H. Crouwel.

479 M. Marazzi, 'Das 'geheimnisvolle' Land Ahhijawa', in: Otten, Akurgal, Ertem and Süel (n. 446), 365–77.

480 W.-D. Niemeier, 'The Mycenaeans in Western Anatolia and the Problem of the Origins of the Sea Peoples', in: Gitin, Mazar and Stern (n. 24), 20-5 with figs 3–4, 43–4. Against the recent attempts by Benzi (n. 249), 967–9 and Mountjoy (n. 408), 47–51, to localize again Ahhiyawa in the south-eastern Aegean with the islands of Rhodes and Kos and the opposite coast of the Anatolian mainland see Niemeier, forthcoming (n. 24) and R. Hope Simpson (n. 335), 203–37.

481 See Niemeier (n. 480), 20-1 fig. 3 with references. Add Cline 1994 (n. 404), 69; id. 1995 (n. 183), 146; id. 1996 (n. 432), 145; de Martino (n. 433), 24–5; Starke (n. 429), 450-1.

482 F. Sommer, *Ahhijavafrage und Sprachwissenschaft* (Munich, 1934), 76–93; Steiner 1964 (n. 477), 383–4.

483 J. Harmatta, 'Zur Ahhiyawa-Frage', in: A. Bartonek (ed.), *Studia Mycenaea: Proceedings of the Mycenaean Symposium, Brno, April 1966* (Brno, 1968), 117–124; M. Finkelberg, 'From Ahhiyawa to Achaioi', *Glotta* 46 (1988), 127–134; W. Röllig, 'Achäer und Trojaner in hethitischen Quellen', in: I. Gamer-Wallert (ed.), *Troia: Brücke zwischen Orient und Okzident* (Tübingen, 1992), 196–7; Starke (n. 429), 469–70 n. 25. In an interesting new theory O. Carruba, 'Ahhiya e Ahhiyawa, la Grecia e l'Egeo', in: T.P.J. van den Hout and J. de Roos (eds), *Studio Historiae Ardens: Ancient Near Eastern Studies Presented to Philo H.J. Houwink ten Cate on the Occasion of his 65th Birthday* (Leiden, 1995), 7–21, connects Ahhiya/Ahhiyawa with the name of the Aegean sea.

484 J. Friedrich, 'Werden in den hethitischen Keilschrifttexten die Griechen erwähnt?', *Kleinasiatische Forschungen* 1 (1930), 104–5; E.O. Forrer, 'Für die Griechen in den Boğazköi-Inschriften', ibid., 254; H.G. Güterbock, 'Wer war Tawagalawa?', *Orientalia* 59 (1990), 157–65.

485 As confirmed by N. Oettinger in a letter to me of 17 January 1998.

486 E.O. Forrer, 'Vorhomerische Griechen in den Keilschrifttexten aus Boğazköi', *Mitteilungen der Deutschen Orientgesellschaft* 63 (1924), 9–10.

487 Ventris and Chadwick (n. 290), 546.

488 Letter quoted in n. 485. F. Starke, *Untersuchung zur Stammbildung des keilschrift-luwischen Nomens* (Studien zu den Boğazköy-Texten 31; Wiesbaden, 1990), 226 n. 766, states that the names of people from Ahhiyawa were certainly known to the Hittites via Luwian mediation and that the aphaeresis e > a and o > a are well known in western Asia Minor.

489 J. Harmatta, 'Ahhiyawa Names – Mycenaean Names', in: *Atti e Memorie del Primo Congresso Internazionale di Miceneologis, Roma 27*

Settembre - 3 Ottobre 1967 (Rome, 1968) Vol. I, 405–8.

490 On the find-spot and its archaeological context see P. Neve, 'Die Ausgrabungen in Boğazköy-Hattuša 1992', *AA* (1993), 648–52;

491 A. Ünal, A. Ertekin and I. Ediz, 'The Hittite Sword from Boğazköy-Hattuša, found in 1991, and its Akkadian Inscription', *Müze/Museum* 4 (1991), 51; M. Salvini and L. Vagnetti, 'Una spada di tipo egeo da Boğazköy', *PP* 276 (1994), 227–8; Cline (n. 432), 138.

492 Salvini and Vagnetti (n. 491), 228–31; Bryce (n. 92), 136–7; Klengel (n. 428), 111.

493 Salvini and Vagnetti (n. 491), 219–25.

494 For the probable existence of such workshops see Sandars (n. 372), 28.

495 K. Bittel, 'Tonschale mit Ritzverzierung aus Boğazköy', *RA* (1976), 9–14; H.G. Güterbock, 'Hittites and Akhaeans: A New Look', *Proceedings of the American Philosophical Society* 128.2 (1984), 115, 118 fig. 6; Macqueen (n. 455), 63 fig. 34; S.P. Morris, 'A Tale of two Cities: The Miniature Frescoes from Thera and the Origins of Greek Poetry', *AJA* 93 (1989), 532–3 fig. 10. Cf., for instance, J. Borchardt, *Homerische Helme* (Mainz, 1972), pls 4.4, 7.7.11. The Hittite helmet on the relief of the King's Gate at Hattuša is of different type: ibid., pl. 25.1; Macqueen (n. 455), 62 fig. 32.

496 T.R. Bryce, 'Ahhiyawans and Mycenaeans - An Anatolian Viewpoint', *OJA* 8 (1989), 298–9.

497 This interpretation is only possible with the Aegean high chronology in which the late 15th century BC is LH IIIA:1, when Mycenaean settlements started to exist on Rhodes, Kos and at Miletus. On the low chronology, the late 15th century BC is LH IIB, a period when the Mycenaeans were not yet demonstrably active in the southeastern Aegean; cf. Mee 1998 (n. 19), 142.

498 Mee 1988 (n. 21), 304.

499 Mee 1998 (n. 19), 143.

500 Macqueen (n. 455), 77–8; O.R. Gurney, *The Hittites* (2nd edn, London, 1990), 58–62; F. Imparati, 'Die Organisation des hethitischen Staates', in: Klengel (n. 428), 358–87.

501 Schachermeyr (n. 460), 44–55; T.R. Bryce, 'The Nature of Mycenaean Involvement in Western Anatolia', *Historia* 39 (1989), 5; Niemeier (n. 480), 44; most recently: Hope Simpson (n. 335), 233–4.

502 G.A. Lehmann, *Die mykenisch-frühgriechische Welt und der östliche Mittelmeerraum in der Zeit der 'Seevölker'-Invasionen um 1200 v.Chr.* (Rheinisch-Westfälische Akademie der Wissenschaften, Vorträge G 276; Opladen, 1985), 52–3; id. (n. 452), 112; see also Toepffer, 'Achaia', in: *RE* I.1 (1898), 156–7.

503 Lehmann (n. 452), 112 referring to E. Porada, 'The Cylinder Seals found at Thebes in Boeotia', *Archiv für Orientforschung* 28 (1981–2), 1–78, esp. 68–70.

504 Kühne and Otten (n. 453), 16–7 Rs IV 23; Güterbock (n. 434), 136. Contra the attempt by G. Steiner, "Schiffe von Ahhijawa' oder 'Kriegsschiffe' von Amurru im Sauskamuwa-Vetrag?', *Ugarit-Forschungen* 21 (1989), 393–411 to read 'War Ships' instead of 'ships of Ahhiyawa', see Lehmann (n. 452), 111 n. 11.

505 See Cline 1994 (n. 404), 25–6 with references.

506 L. Godart and A. Sacconi, 'La géographie des états mycéniens', *Académie des Inscriptions & Belles Letters, Comptes Rendues de Séances de l'Année* 1999, 538–45; J. Latacz, *Troia und Homer: Der Weg zur Lösung eines alten Rätsels* (Munich, 2003), 285–94 (now also translated into English: *Troy and Homer: Towards a Solution of an Old Mystery* [Oxford, 2004]).

507 Hope Simpson (n. 335), 234–6.

508 Above with ns 419–20.

509 See Niemeier (n. 480), 21–3, map fig. 5.

510 Ibid., 45. Klengel (n. 428), 136 map 5 still locates Millawanda in Lycia.

511 As suggested by Jewell (n. 475), 394–5.

512 Güterbock, in: Mellink (n. 163), 41

513 Huxley (n. 22), 11–2.

514 A. Heubeck, 'Zu einigen kleinasiatischen Ortsnamen', *Glotta* 63 (1985), 127–32.

515 G. Steiner, 'Miletos', in *Lexikon des frühgriechischen Epos* III (Göttingen, 1993), 211–2.

516 Heubeck (n. 514), 132.

517 For this see ibid., 132.

518 For instance: Köln - Cologne, München - Munich; see also Starke (n. 429), 468–9 n. 4; A. Morpurgo Davies, quoted by Hawkins (n. 450), 30-1 n. 207; Latacz (n. 452), 111.

519 See Wiener 2003 (n. 11), 250.

520 A. Mallwitz, 'Zur mykenischen Befestigung von Milet', *Ist. Mitt.* 9–10 (1959–60), 74–5; W. Voigtländer, 'Die mykenische Stadtmauer von Milet und einzelne Wehranlagen der späten Bronzezeit', *Ist. Mitt.* 25 (1975), 17–34; Schiering 1979 (n. 9), 1–82. Hope Simpson (n. 335), 215–6, 219, doubts the Anatolian character of the fortification wall and thinks that it may have been constructed in the middle of the LH IIIB:1 period, around the middle of the 13th century BC. This date is impossible according to the new excavation results.

521 Przeworski (n. 374), 64, 194, pl. XIII,3; H.Th. Bossert, *Altanatolien* (Berlin, 1942), 143 no. 600. J.A.H. Potratz, *Die Pferdetrensen des Alten Orient* (Rome, 1966) 107, pl. XLVIII, fig. 110. Definition of type A 2: K. Bittel, 'Altkleinasiatische Pferdetrensen', *Ist. Mitt.* 25 (1975), 303.

522 J.H. Crouwel, *Chariots and other Means of Land Transport in Bronze Age Greece* (Amsterdam, 1981), 103–4. The pieces from Miletus are catalogued ibid., 158 nos. B11–12, pl. 8.

523 Ibid., 102–4, types 1, 2, 4.

524 L.R. Woolley, *Alalakh: An Account of the Excavations at Tell Atchana in the Hatay, 1937–1949* (London, 1955), 276, AT/36/4, pl. LXX; Sandars (n. 313), 141, 153.

525 C.F.A. Schaeffer, *Mission de Ras Shamra* VIII (Ugaritica III; Paris, 1956), 277–8, pl. X; Sandars (n. 313), 141, 153, pl. 27.58.

526 J.B. Pritchard, *The Cemetery at Tell es-Sa'idieh, Jordan* (Philadelphia, 1980), 16, figs 5.13, 52.10.

527 W.F. Petrie, *Tools and Weapons* (London, 1917), 27, pl. 32.9; Sandars (n. 313), 153, pl. 27.60.

528 A. Geiger, 'Ein Schwertheft aus dem Tempelviertel der Oberstadt von Hattuša', *Ist. Mitt.* 43 (1993), 213–7, fig. 1, pl. 20.4.

529 For the date see Vermeule and Karageorghis (n. 349), 166 no. XIII.5, 'transitional' = LH IIIB/C, *c.* 1230–1200/1190 (ibid., 3).

530 C. Weickert, 'Die Ausgrabung beim Athena-Tempel in Milet 1957, III: Westabschnitt', *Ist. Mitt.* 9–10 (1959–60), 65; accepted by Vermeule and Karageorghis (n. 349), 166.

531 H.G. Buchholz, 'Ägäische Funde in Randgebieten des Mittelmeeres', *AA* (1974), 365; Mee 1978 (n. 9), 136; Güterbock (n. 495), 115.

532 T.P.J. van den Hout, 'Tuthalija IV und die Ikonographie hethitischer Grosskönige des 13. Jhs.', *Bibliotheca Orientalis* 52 (1995), 545–73.

533 Hawkins (n. 450), 5–6 figs 3–4.

534 KUB XXII 13. Tranlations and interpretations: Güterbock 1992 (n. 446), 235–42; Bryce (n. 92), 337–9.

535 K. Kilian, 'La caduta dei palazzi micenei continentali: aspetti archeologici', in: D. Musti (ed.), *Le origini dei Greci: Dori e mondo egeo* (Rome, 1986), 74–5 table fig. 1.

536 S. Symeonoglou, *Kadmeia I: Mycenaean Finds from Thebes, Greece, Excavations at 14 Oedipus Street* (Göteborg, 1973), 21–2; K. Demakopoulou, *A. Delt.* 29 (1973–74) Chron., 441; ead., 'Mycenaean Jewellery Workshop in Thebes', *AAA* 7 (1974), 171, 173; Th.G. Spyropoulos and J. Chadwick, *The Thebes Tablets II* (Salamanca, 1975), 69 n. 2; E. Andrikou, 'The Pottery from the Destruction Layer of the Linear B Archive in Pelopidou Street', in: Deger-Jalkotzy, Hiller and Panagl (n. 159), 86–7.

537 Shear (n. 267), 154–5; Tournavitou (n. 259), 298–9; A. Onassoglou, *He Oikia tou taphou ton tripodon stis Mykenes* (1995), 140-1, 149; E.B. French, 'The Ups and Downs of Mycenae', in: Gitin, Mazar and Stern (n. 24), 2–5; A.D. Moore and W.D. Taylour, *Well Built Mycenae, The Helleno-British Excavations within the Citadel of Mycenae, 1959–1960, Vol. 10: The Temple Complex* (Oxford, 1999), 2–3 table 1.

538 P. Grossmann and J. Schäfer, 'Tiryns : Unterburg 1968. Grabungen im Bereich der Bauten 3 und 4', in: *Tiryns, Forschungen und Berichte VIII* (Mainz, 1975), 94–6; K. Kilian, 'Ausgrabungen in Tiryns 1981', *AA* (1983),309–14, id., 'Mycenaeans up to Date, Trends and Changes in Recent Research', in: French and Wardle (n. 21), 134.

539 The dumps with many fresco fragments on the north-western slope of the hill of Ano Englianos/Pylos – see M.L. Lang, *The Palace of Nestor at Pylos in Western Messenia II. The Frescoes* (Princeton, 1969), 217–9 – may come from such a destruction.

540 Kilian (n. 535), 74–5 table 1; Shear (n. 267), 155; E.B. French, 'Evidence for an Earthquake at Mycenae', in: S. Stiros and R.E. Jones (eds), *Archaeoseismology* (Fitch Laboratory Occasional Papers 7; London, 1996), 51–4.

541 S. Deger-Jalkotzy, *e-qe-ta: Zur Rolle des Gefolgschaftswesens in der Sozialstruktur mykenischer Reiche* (Vienna, 1978), 29 with n. 73; Schachermeyr (n. 460), 336.

542 See Tournavitou (n. 259), 298–9.

543 See for Pylos: J.C. Wright, 'Changes in Form and Function of the Palace at Pylos', in: C.W. Shelmerdine and Th.G. Palaima (eds), *Pylos Comes Alive: Industry and Administration in a Mycenaean Palce. A Symposium of the New York Society of the Archaeological Institute of America and Fordham University* (New York, 1984), 19–29; Th.G. Palaima and J.C. Wright, 'Ins and Outs of the Archive Rooms at Pylos: Form and Function in a Mycenaean Palace', *AJA* 89 (1985),

251–62; C.W. Shelmerdine, *The Perfume Industry of Mycenaean Pylos* (Göteborg, 1985) 51–62; ead., 'Architectural Change and Economic Decline at Pylos', *Minos* 20-22 (1987), 557–68. For Mycenae and Tiryns see Wright, op.cit., 28.

544 H.A. Hoffner, 'The Last Days of Khattusa', in: W.A. Ward and M.S. Joukowsky, *The Crisis Years: The 12th Century from beyond the Danube to the Tigris* (Dubuque, 1992), 46–52; Starke (n. 429), 193–4; Klengel (n. 428), 72.

545 P. Alin, *Das Ende der mykenischen Fundstätten auf dem griechischen Festland* (1962), passim; J.T. Hooker, *Mycenaean Greece* (Lund, 1976), 140–80; Ph.P. Betancourt, 'The End of the Greek Bronze Age', *Antiquity* 50 (1976), 40–7; S. Deger-Jalkotzy, 'Die Erforschung des Zusammenbruchs der sogenannten mykenischen Kultur und der sogenannten dunklen Jahrhunderte', in: Latacz (n. 452), 127–54; C.W. Shelmerdine, 'Review of Aegean Prehistory VI: The Palatial Bronze Age of the Southern and Central Greek Mainland', *AJA* 101 (1997), 580–4.

546 On the problem of the dating of this destruction to LH IIIC Middle or LH IIIC Late see above with n. 12.

547 Schachermeyr (n. 12), 338–9 thinks that there may have been more destructions at Miletus during this period.

548 As has been already stated by Desborough (n. 22), 163.

549 Hommel (n. 255), 53, pl. 52.1–2; W. Schiering, 'Der Alte Athenatempel von Milet: Der archäologische Befund', *Ist. Mitt.* 18 (1968), 145, pl. 34.3b.

550 Desborough (n. 22), 163, 233; id., *The Greek Dark Ages* (London, 1972), 83, 179–80; A.M. Snograss, *The Dark Age of Greece* (Edinburgh, 1971), 66–7; C.J. Emlyn-Jones, *The Ionians and Hellenism: A Study of the Cultural Achievement of Early Greek Inhabitants of Asia Minor* (London, 1980), 13.

551 Desborough 1972 (n. 550), 183–4.

552 Desborough (n. 22), 254.

553 H. Mühlestein, 'Namen von Neleiden auf Pylostäfelchen', *Mus. Helv.* 22 (1965), 155–65, reprinted in id., *Homerische Namensstudien* (Frankfurt, 1987), 1–11; Schachermeyr (n. 12), 375; id., *Die griechische Rückerinnerung im Licht neuer Forschungen* (Vienna, 1983), 302-6.

554 R. Osborne, *Greece in the Making 1200–479 BC* (London, 1996), 37.

555 J.M. Hall, *Ethnic Identity in Greek Antiquity* (Cambridge, 1997), 51–3. Similar arguments are offered by B. Patzek, *Homer und Mykene: Mündliche Überlieferung und Geschichtsschreibung* (Munich, 1992), 111; K.-W. Welwei, *Die griechische Frühzeit 2000 bis 500 v.Chr.* (Munich, 2002), 31–2.

556 C. Renfrew, *Archaeology and Language: The Puzzle of Indoeuropean Origins* (1987), 123–44, discusses several models of change in language which all are, however, connected with the movement of people. Further evidence for the existence of some historical reality behind the tradition of the Ionian migration is discussed in Niemeier, forthcoming (n. 24).

557 As has been confirmed by M. Krumme and M. Kerschner who are studying the protogeometric pottery of Miletus (Krumme) and Ephesos (Kerschner).

558 M. Kerschner, 'Zum Kult im früheisenzeitlichen Ephesos. Interpretation eines protogeometrischen Fundkomplexes aus dem Artemisheiligtum', in: B. Schmaltz and M. Söldner (eds), *Griechische Keramik im kulturellen Kontext, Akten des Internationalen Vasen-Symposions in Kiel vom 24. bis 28.9.2001* (Münster, 2003), 246–50.

559 As to these, see K. Reber, *Untersuchungen zur handgemachten Keramik Griechenlands in der submykenischen, protogeometrischen und geometrischen Zeit* (Jonsered, 1991), 20-56, figs 1–5, 10, pls 1–7.

560 O. Murray, *Early Greece* (London, 1980), 16.

561 K.-W. Welwei, *Athen: Vom neolithischen Siedlungsplatz zur archaischen Großpolis* (Darmstadt, 1992), 214; Prinz (n. 2), 314–6.

562 H.-J. Gehrke, 'Mythos, Geschichte, Politik – antik und modern', *Saeculum* 45(1994), 247; id., 'Was ist Vergangenheit? Oder: Die 'Entstehung' von Vergangenheit', in: Ch. Ulf (ed.), *Der neue Streit um Troia* (Munich, 2003), 64.

563 B. Smarczyk, *Untersuchungen zur Religionspolitik und politischen Propaganda Athens im Attisch-Delischen Seebund* (Munich, 1990), 378.

564 As also Smarczyk, ibid., 378–83.

ATHENA - TEMPEL
MILETUS I: Chalcolithic
MILETUS II: EBA
MILETUS III: MBA
MILETUS IVa: MM III - LM I A
MILETUS IVb: LM I B-II
MILETUS V: LH III A1-2
MILETUS VI: LH III B - C Early
N
MILETUS AT 2004
Local System of Coordinates
0 5 10 m

Colour Plate 1 Miletus: Phase plan of the architecture of the prehistoric levels in the area of the Temple of Athena as excavated up to 2004

Colour Plate 2 Miletus I: Fragments of Late Chalcolithic dark burnished pottery with white linear decoration

Colour Plate 4 Miletus III: Fragments of imported Kamares pottery, MM IB (upper and lower left) and MM II

Colour Plate 3 Miletus II: Head of a Cycladic marble figurine, Keros-Syros culture, Dokathismata variety, EB II

Colour Plate 5 Miletus III: Imported MM II lentoid jug

Colour Plate 6 Miletus III: Pyxis lid of dark-faced incised ware, MM IA-B

Colour Plate 7 Horn button seal with representation of Cretan goat (*agrimi*), MM IA-IB

Colour Plate 8 Miletus III: Hemicylinder of greenish serpentine with two circles, MM IB-II

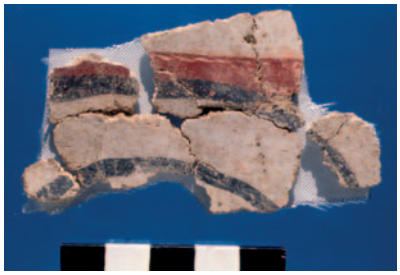
Colour Plate 9 Miletus III: Two hole hanging nodule, MM II

Colour Plate 10 Miletus IVb: Fragments of imported LM IB Marine Style vessels

Colour Plate 11 Miletus IVa: Locally produced Minoan-type domestic pottery, including Minoan-type loomweights

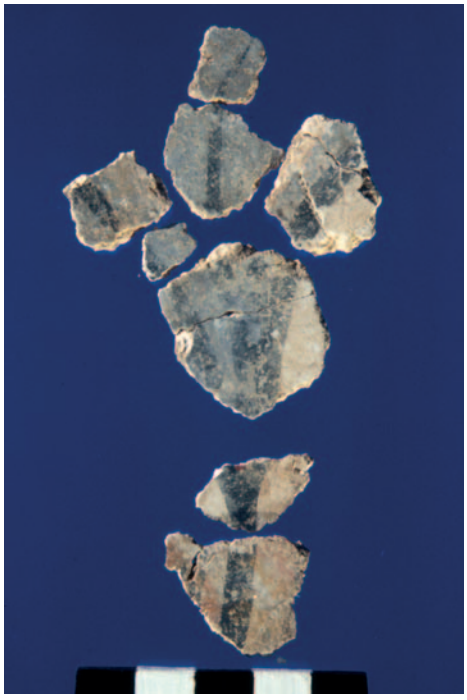
Colour Plate 12 Miletus IVa: Fragments of a Minoan-type plastered offering table

Colour Plate 13 Miletus IVa: Fragment of conical rhyton with appliqué representation of a lioness irunning



Colour Plate 14 Miletus IVa: Fresco fragment with spiral frieze

Colour Plate 15 Miletus IVa: Fresco fragment with notched plume of a griffin's wing



Colour Plate 16 Miletus IVa: Fresco fragments with representation of a blue papyrus umbel

Colour Plate 17 Miletus IVa: Fresco fragments with representation of a Madonna Lily (reconstruction by B. Niemeier)

Colour Plate 18 Miletus IVa: Fresco fragments with representation of reeds (reconstruction by B. Niemeier)

Colour Plate 19 Miletus IVa: Minoan cushion-shaped seal of black serpentine with a tectonic motif

Colour Plate 20 Miletus IVa: Mycenaean blue glass beads from Değirmentepe Mycenaean chamber tomb 2

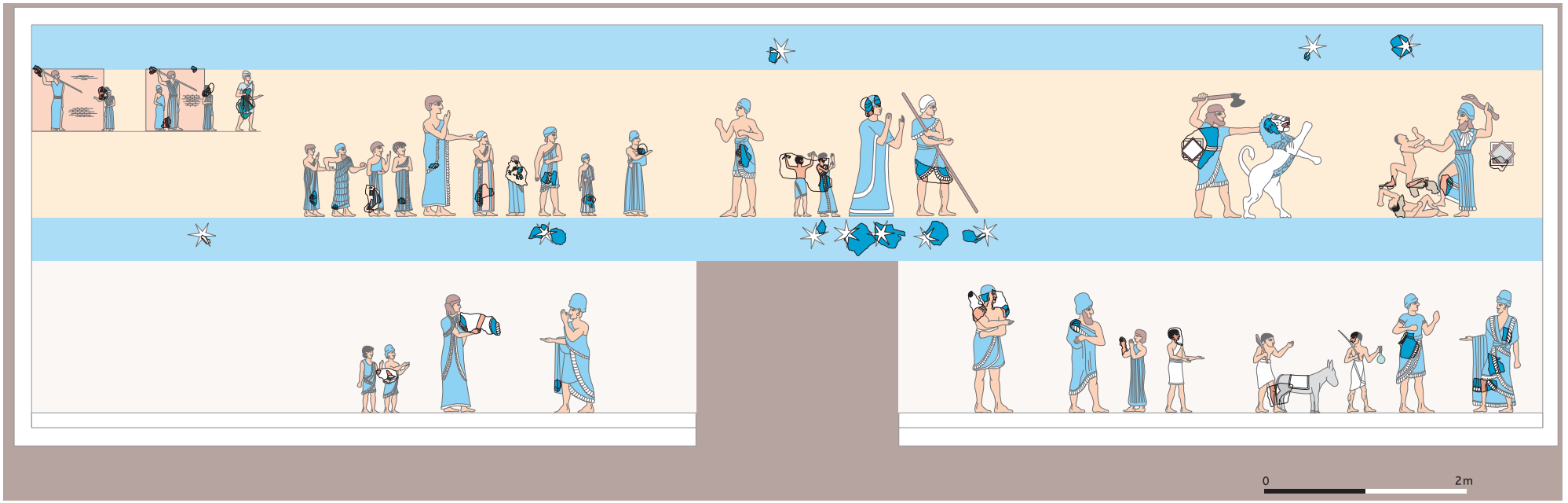
Colour Plate 21 Mycenaean gold rosettes from Değirmentepe Mycenaean chamber tomb 8

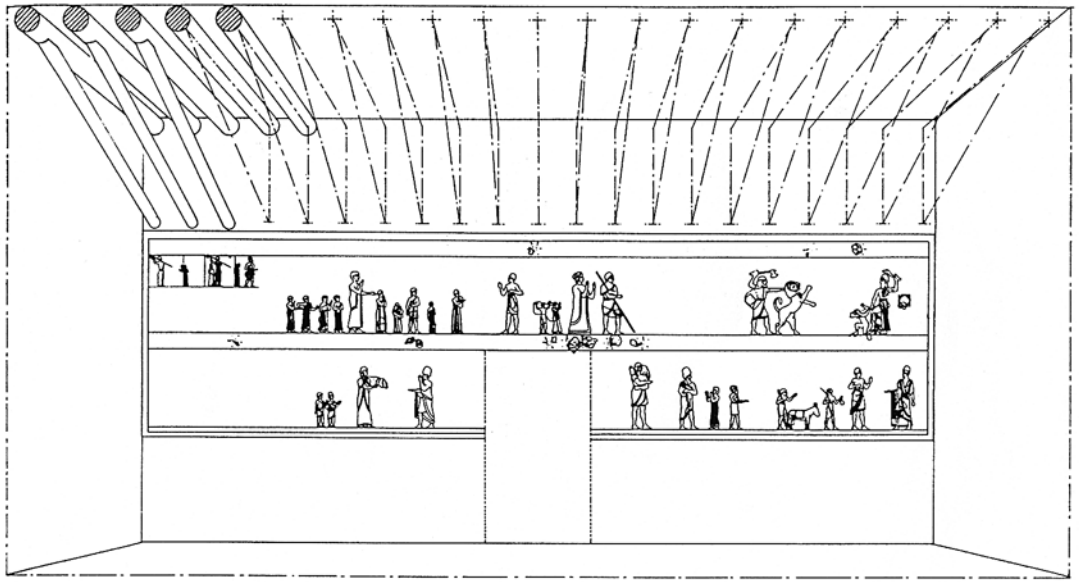
Colour Plate 1 Peinture de la salle 132 (restitution Paul François et Jean Lauffray, Parrot 1958 II.1, pl. E)

Colour Plate 2a Scène sacrificielle, fragment B tombé des parties hautes de la cour 106 (A. Parrot, *Sumer* [Paris 1960], fig. 344)

Colour plate 2b Scène sacrificielle, fragment A tombé des parties hautes de la cour 106 (A. Parrot, *Sumer* [Paris, 1960], fig. 345)

Colour Plate 3 Peinture de l'Investiture (A. Parrot, *Sumer* [Paris, 1960], fig. 346)





Colour Plate 4a Salle 220', restitution Béatrice Muller (dessin Pierre Kimmenauer, mise en couleur Anne Horrenberger)
4b Salle 220', dessin Margueron, Muller et Renisio (n. 19), 451 fig. 11

De Mari à l'Egée

La Peinture Proche-Orientale au 2e Millénaire av. J.-C.

Béatrice Muller

C'est bien la fascination pour la peinture minoenne qui m'a conduite à entreprendre mes premiers travaux sur la conception du décor – non figuratif – à la fois en Orient et en Egée.[1] J'avais été frappée par une phrase d'André Parrot[2] qui disait: 'S'il y a emprunt à l'Egée, nous ne le décelons que dans la tresse spiralée qui, à Mari, est traitée dans un style que nous ne croyons pas mésopotamien'. L'auteur confondait la torsade, attestée dès le 3e millénaire av. J.-C. en Mésopotamie,[3] avec la spirale qui, elle non plus, n'est pas complètement inconnue, ni des Proto-Elamites, ni des Syriens dès la fin du 4e millénaire av. J.-C.[4] Il m'a donc semblé plus fructueux de considérer cette peinture murale de part et d'autre de la Méditerranée de façon globale, dans son intégration à l'architecture d'abord, et dans son langage iconographique ensuite.

En dehors du palais de Mari, exceptionnellement bien préservé, la peinture murale en Syrie-Mésopotamie n'a livré que peu de vestiges: pour le 2e millénaire av. J.-C. on ne peut retenir que les sites d'Alalakh (niveau VII: vers 1700, niveau IV: vers 1450 av. J.-C.), Qatna (incertitude: 16e s. ou 15e–14e s. av. J.-C.), Nuzi (14e s. av. J.-C.), Aqarquf (12e s. av. J.-C.). La construction du palais de Mari – 21e s. av. J.-C., j'aurai l'occasion d'y revenir – est contemporaine ou même antérieure à celle des premiers palais crétois,[5] qui ont livré très peu de restes de peintures.[6] Les comparaisons se font donc entre deux pôles qui ne sont pas contemporains: Mari, détruite en 1761 par Hammurabi de Babylone, et les seconds palais crétois, construits après 1700 av. J.-C., les autres éléments de peinture proche-orientale étant réduits à quelques fragments pour chaque site.

Les dernières découvertes de Tell Dab'a, dont il a été question ici même en 1992, semblent montrer un rayonnement minoen sur l'Egypte.[7] Par ailleurs les révisions de la chronologie: d'une part quant à la date de l'éruption de Théra (1625 au lieu de 1500 av. J.-C.);[8] d'autre part quant à l'abaissement de la chronologie paléobabylonienne, qui placerait la destruction de Mari vers 1665 au lieu de 1760 av. J.-C.;[9] conduisent-elles à réévaluer l'influence possible de l'Orient sur l'Egée?

Situer ces peintures dans leur contexte historique, architectural et culturel est une tentative pour intégrer la nouvelle donne. Une première partie consistera en une présentation générale des peintures de Mari; les autres parties – aspects techniques, décor non figuratif, enfin aspects iconographiques – tenteront d'apporter quelques parallèles significatifs.

A. Présentation des peintures de Mari[10]

En dehors d'une composition fragmentaire provenant du temple de Ninhursag (Dynastique Archaïque III, c'est-à-dire milieu du 3e millénaire av. J.-C.)[11] et d'infimes vestiges rouges recueillis dans le Palais Oriental (dit aussi palais des *Shakkanakku*, fin du 3e millénaire av. J.-C.), toutes les peintures de Mari proviennent du grand Palais Royal: sur les quelque 300 salles et cours, 26 ont fourni des restes de peinture, retrouvées en place ou sous forme de fragments dans les décombres; ces peintures consistent soit en simples aplats colorés, soit en motifs géométriques, soit en compositions figuratives (**Fig. 1**).[12]

I. Situation, état de conservation et grands thèmes

1. Vestiges d'aplats colores dans le secteur de l'entree

En suivant le cheminement obligé à partir de l'unique accès,[13] le visiteur franchit d'abord une porte monumentale dont les seuls vestiges de décor consistaient en peinture rouge ou noire sur la tranche des briques. Entre les cours 154 et 131, le passage 152 avait, dans son dernier état, au-dessus de sa plinthe de plâtre, un enduit teinté; schéma semblable pour la salle d'eau 192 (au-dessus de sa plinthe bitumée) et la salle 189 (au-dessus de sa plinthe de briques).

2. Grandes compositions dans les secteurs officiels

a) Ouvrant sur la grande cour 131, **la salle 132** n'est pas, comme l'avait identifiée André Parrot, une salle d'audience royale mais une chapelle dédiée à Ishtar: allusions textuelles, analyse architecturale et iconographie peinte se confortent pour cette identification (**Colour Pl. 1**).[14] Les fragments, retrouvés dans les décombres, ont été restitués en une composition en cinq registres longue de 3,36m et haute de 3m environ. L'ensemble n'est pas complet et certains détails posent des problèmes d'interprétation. Les registres, de hauteurs variables, sont séparés par des bandes décoratives à motifs géométriques (carrés présentés par les pointes, ondulations dans le sens horizontal ou vertical). De bas en haut se succèdent: un défilé de format miniature (hauteur: 26cm) dont subsistent deux pêcheurs; deux scènes religieuses, les plus importantes en dimensions (hauteur de chacune: 65cm) et en signification; une scène de guerre, également miniature, attestée par un guerrier s'arrachant du front un javelot (hauteur restituée: 25cm); enfin trois personnages au costume similaire à celui des pêcheurs suggère un défilé de porteurs (hauteur restituée: 48cm). Les registres religieux représentent respectivement: une scène de libation au dieu-lune Sin assis sur un podium à degrés symbolisant la montagne (en bas), et une offrande à la déesse Ishtar (au-dessus). Cette dernière, identifiable aux trois armes qui sortent de ses épaules, n'est-elle pas à la fois la déesse de la fécondité et de la guerre, ce qui justifierait le registre guerrier?

b) Le secteur officiel par excellence est **l'enfilade de la cour 106, dite 'cour du Palmier', de la salle 64 et de la salle 65** (**Fig. 2**), auquel on accède obligatoirement, lorsqu'on vient de la cour 131, par le couloir coudé 114–112, aux murs et au sol plâtrés, dont la blancheur est interrompue par le gris de la plinthe. Le visiteur, qui arrive ainsi par la porte Nord de la cour 106, voit se déployer en face de lui, sur le mur opposé protégé par un auvent,[15] ce qui fut certainement le plus vaste ensemble pictural du palais.

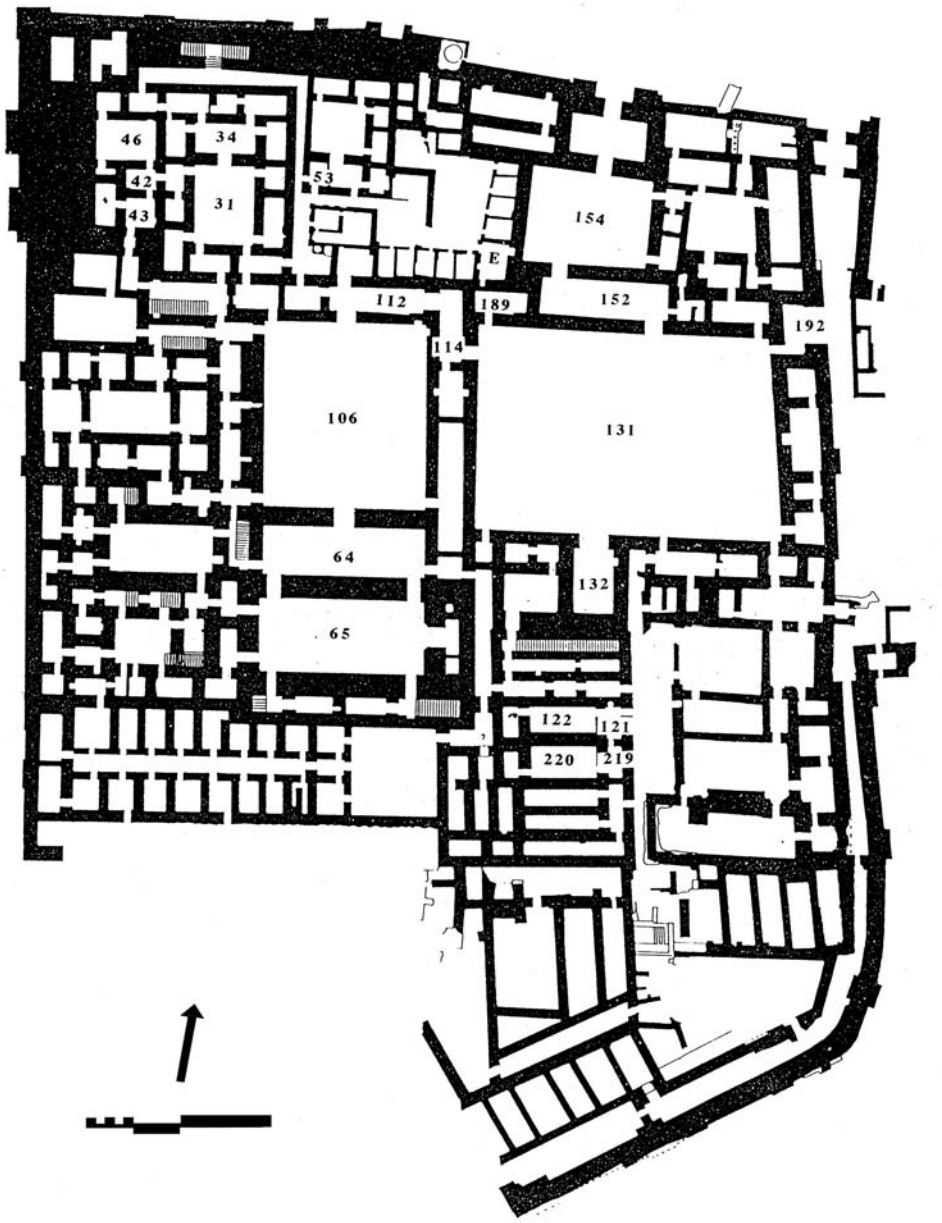


Figure 1 Plan du palais de Mari avec les principaux emplacements des peintures (d'après Margueron 1982, fig. 256)

Au-dessus des portes, les compositions ne s'étendaient pas seulement sur tout le mur sud, long de quelque 25m, mais débordaient encore sur les murs est et ouest, sur près de 5m de chaque côté; retrouvées là aussi en fragments qui ne représentent qu'une proportion infime de la totalité, elles peuvent être restituées sur une hauteur de 3m.[16] Les ensembles les plus cohérents, quoique incomplets, sont deux scènes sacrificielles (**Colour Pl. 2**) où les personnages se superposent sur deux registres: la première (*scène Sacrificielle B*) est conduite par un personnage grandeur nature (hauteur: 1.60 à 1.80m) où l'on s'accorde à reconnaître le Roi; sur l'autre (*scène Sacrificielle A*), un dignitaire mène un taureau paré pour le sacrifice (cornes dorées ou argentées, croissant semblable sur le front). Par ailleurs près d'une centaine de fragments présentent d'autres personnages qui attestent peut-être une scène guerrière de grand format, ainsi que d'autres scènes sacrificielles de format miniature (hauteur: 30cm).[17]

La composition la plus célèbre est dite *Peinture de l'Investiture* (**Colour Pl. 3, Fig. 3**), la seule retrouvée encore en place sur le mur parce qu'elle était située juste au-dessus de la plinthe, à droite de la porte 106-64. Contrairement à la coutume proche-orientale qui compose plutôt en registres s'étendant en frises, cette peinture est un tableau rectangulaire haut de 1,75m et long de 2,50m pourvu d'un cadre peint et se présentant comme une sorte de triptyque,[18] au milieu duquel prend place un tableau plus petit, à deux registres. C'est le registre supérieur de ce dernier qui a donné son nom à l'ensemble: la déesse Ishtar – encore elle – ici debout, un pied sur son animal-attribut, le lion, tend au roi le sceptre et le bâton, insignes du pouvoir. Les volets latéraux, sur lesquels je reviendrai à propos des conventions de dessin, comportent les éléments suivants, répétés symétriquement: un arbre composite gardé par trois animaux fantastiques superposés (taureau sans doute androcéphale, griffon, sphinx), et un palmier-dattier en cours de cueillette flanqué d'une déesse dite *Lama*, déesse qui intercède ou protège, ici de haut rang comme l'indiquent les quatre paires de cornes de sa tiare.

3. Grandes compositions dans les appartements prives

a) De **la salle 220**, considérée à l'origine comme une salle à manger pour les fonctionnaires, mais qui s'avère être un magasin, André Parrot avait publié une cinquantaine de fragments recueillis dans les éboulis: j'en ai complété pour ma part la publication par celle des fragments tombés à côté, dans le magasin 219. Jean-Claude Margueron a démontré que tous ces

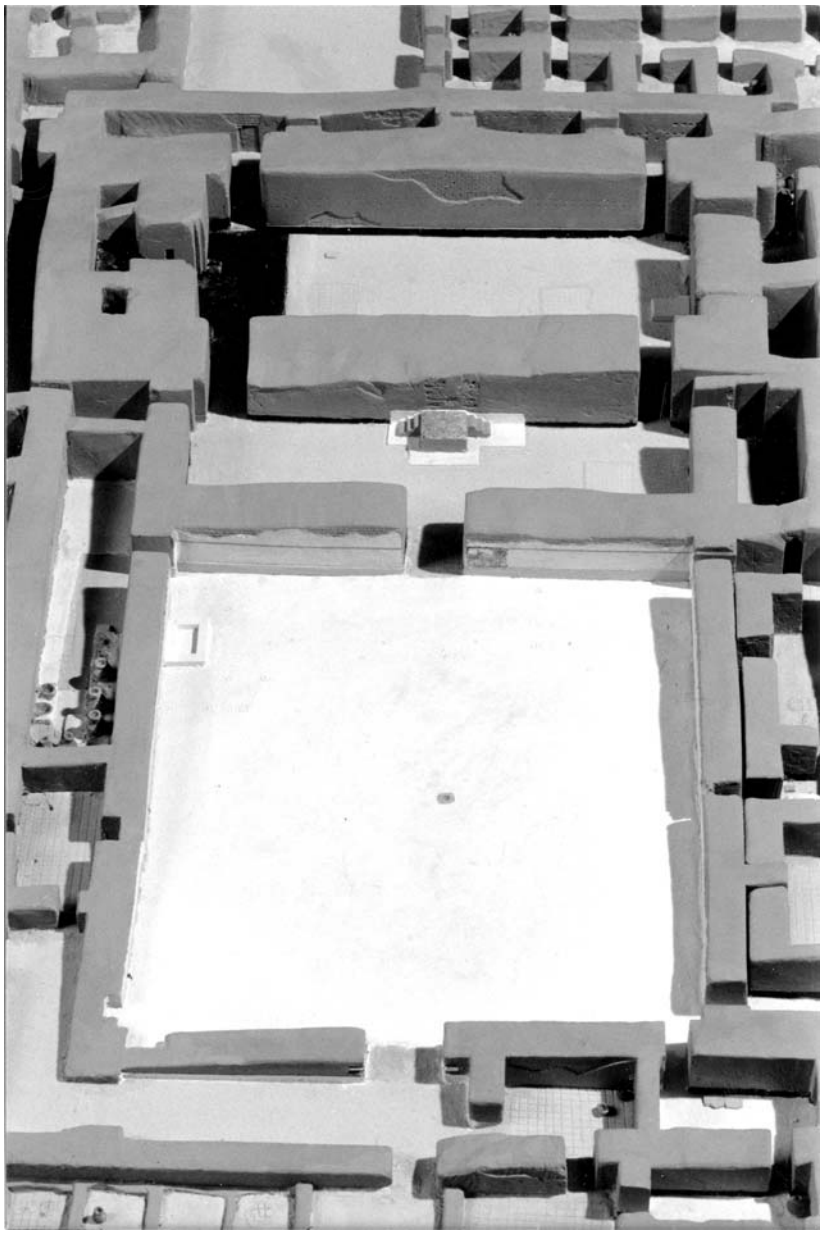


Figure 2 Le secteur officiel 106-64-65, restitution de l'état originel de la ruine (détail d'une maquette réalisée pour le musée du Louvre sous la direction de Jean Margueron, cliché Christian Larrieu, musée du Louvre; cf. J.-C. Margueron, *Mari, métropole de l'Euphrate au IIIe et au début du IIe millénaire av. J.-C.* [Paris, 2004], fig. 442)

fragments ne pouvaient provenir que de l'étage, et qu'au-dessus de quatre de ces magasins (no. 121, 122, 219, 220) s'étendait une grande salle (14,75m x 11m), dite désormais 220', qui était la salle de réception privée des appartements royaux.[19] C'est sur son mur sud que se déployait, sur deux registres, une peinture à la gloire du roi, de 3,50m de haut au moins (**Colour Pl. 4**).

b) Dans un autre secteur, identifié grâce à des archives comme étant l'appartement de la reine, ou plutôt la **'Maison des Femmes'**,[20] des vestiges plus sporadiques de personnages témoignent de l'existence d'une ou de compositions d'une veine semblable à celle de l'ensemble précédent. A côté, dans le logement du personnel féminin, des fragments à motifs géométriques ou figuratifs proviennent d'une phase antérieure.[21]

4. Decor architectural

Dans les secteurs particulièrement soignés, celui-ci pouvait éventuellement se combiner avec les compositions figuratives. A l'inverse de presque toutes ces dernières, il a été retrouvé en place.

a) Faux marbre peint

Dans la salle 64 du secteur officiel, un podium à degrés avait son sommet couvert d'une dalle de gypse, elle-même enduite et peinte de façon à imiter des dalles rectangulaires veinées, de plusieurs couleurs variées (cf. **Fig. 2**).[22]

Dans la 'Maison des Femmes', la plinthe de la porte 31-34 était aussi veinée de rouge et sur le sol de l'espace 31 un panneau compartimenté ('jeu de palets') produisait un effet suggestif semblable.[23]

b) Bandeaux décoratifs

Dans le même secteur, on peut mentionner un triple bandeau bichrome (noir et ocre rouge) à hauteur d'yeux (1,50m à 1,80m) dans les salles 42, 43 et 46. Dans la cour 106, il est bleu et rouge et situé un peu plus haut (2m en moyenne, cf. **Fig. 3**). Plus élaborés et uniques dans leur genre à Mari sont ceux de la salle 31, décorés cette fois d'une torsade: bleue et noire répétée de part et d'autre d'un encastrement (mur nord), ou grise, blanche et orangée (mur sud).

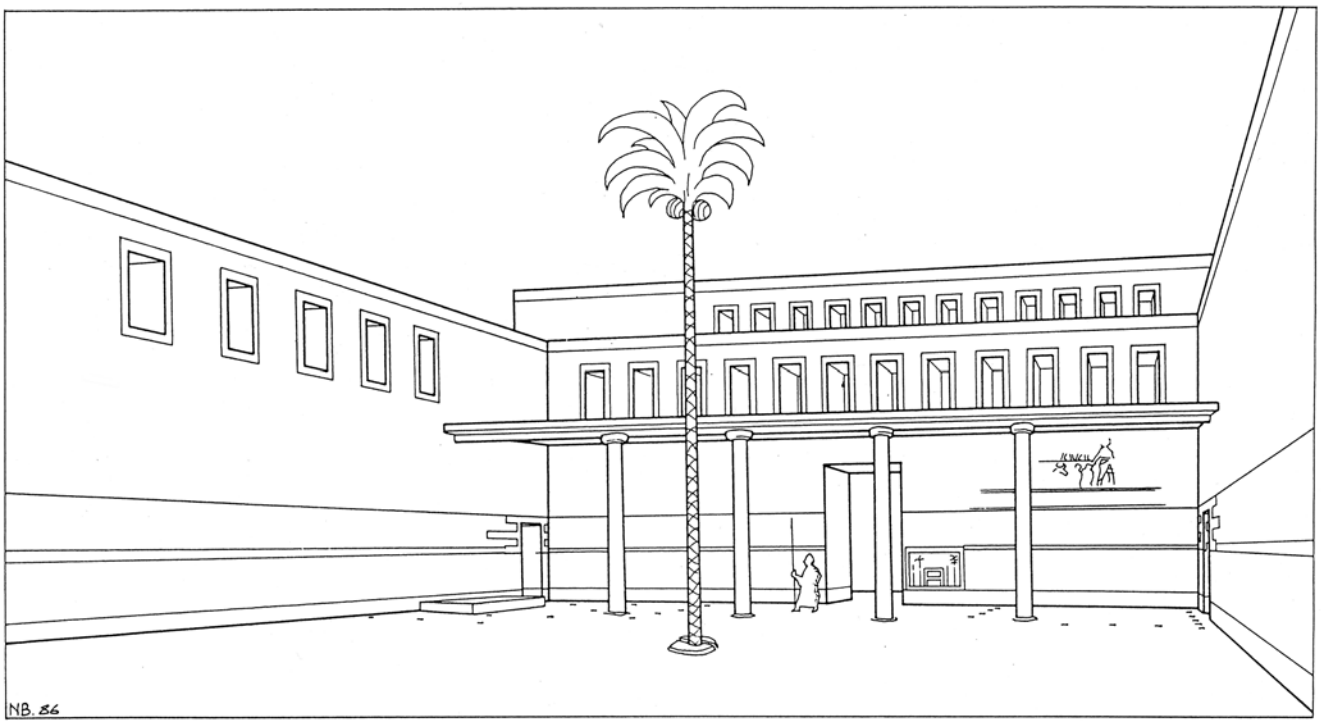


Figure 3 Mari, cour 106 dite 'du palmier', vue vers le sud (restitution Jean Margueron, dessin Nicolas Bresch, cf. J. Margueron, *M.A.R.I.* 5 [1987], fig. 8 p. 478). Version réactualisée dans Margueron 2004 (see Fig. 2 for reference), pl. 58, p. 425

II. Chronologie relative[24]

Depuis les études stylistiques d'Anton Moortgat sur les peintures et depuis l'analyse architecturale par Jean Margueron, il est assuré que le palais, détruit par Hammurabi de Babylone en 1761 av. J.-C.,[25] n'est aucunement l'œuvre du dernier souverain, Zimri-Lim (1775–1761 av. J.-C.), qui n'a laissé sa marque que par des réaménagements mineurs et des replâtrages de qualité plutôt inférieure à ce qu'il y avait auparavant.[26] La construction de ce palais est à imputer aux *Shakkanakku*, à l'origine gouverneurs des rois d'Akkad, devenus ensuite autonomes; l'un d'eux, Hanun Dagan (2016–2008 av. J.-C.) laissa son nom sur la crapaudine de la porte du palais: s'il n'en fut pas forcément le constructeur, il y fit au moins des travaux importants; en tout cas cela donne à ce palais une vie minimale de deux siècles et demi, au cours desquels ont été opérés nombre de remaniements.[27] Les peintures, évidemment subordonnées à ceux-ci, ne peuvent témoigner que des états les plus récents, et d'ailleurs par endroits ont été décelées plusieurs couches superposées.[28] En cumulant les données architecturales, iconographiques et techniques, on peut brosser le tableau suivant:[29]

1. Les plus anciennes peintures sont (outre les fragments des salles 53 et E, dans le secteur situé à l'ouest de l'entrée du palais), la composition de la salle 132, que l'on peut dater du 21^{e} s. av. J.-C.

2. Les scènes hautes de la cour 106 ainsi que celles de la salle 220 se trouvent dans deux secteurs réaménagés au tout début du 18^{e} s. av. J.-C. lors de l'interrègne 'assyrien' de Iasmah-Addu (1795–1775 av. J.-C.).

3. La *peinture de l'Investiture* reste de date controversée: soit elle est attribuée au dernier roi, Zimri-Lim, soit elle pourrait remonter, 40 ans plus tôt, à l'ascendant de celui-ci, Iahdun-Lim, c'est-à-dire avant l'interrègne 'assyrien', ceci pour des raisons techniques.[30]

B. Aspects techniques: supports, pigments, modes d'exécution, réfections

En guise de préambule sur ce point, je voudrais insister sur deux particularités de la peinture proche-orientale:

la pauvreté des vestiges (moins d'une quinzaine de sites pour les 3^{e} et 2^{e} millénaires av. J.-C.) tient davantage aux mauvaises conditions de préservation qu'à la réalité ancienne;

excepté à Alalakh et à Tel Kabri,[31] les peintures de Mari et du Proche-Orient ancien ne sont en aucun cas de véritables fresques.[32]

I. Support[33]

1. Enduit de terre

Celui-ci constitue de toute façon la nature de la sous-couche qui masque l'appareil de briques crues des murs. Quant à la couche de finition sur laquelle sont posées les peintures, elle est généralement en terre dans l'état final du palais, ce qui est visible lorsqu'il y a des réfections, attribuées à Zimri-Lim, le dernier souverain. Mais cet enduit de terre caractérise aussi les fragments trouvés dans les secteurs les plus anciens. En tout cas il contribue à rendre les peintures très fragiles (les bleus, en particulier, sont très évanescents). On ne peut pas retenir la nature de l'enduit comme critère chronologique: les peintures de la salle 220' (enduit de terre) et celles de la cour 106 (enduit de plâtre) sont contemporaines.

2. Platre

Alors qu'en Crète les enduits sont le plus souvent à base de chaux, en Egypte et au Proche-Orient il s'agit de plâtre – *djuss* comme on dit là-bas, car il est le résultat de la calcination, à température relativement basse, du gypse local. Or la technique *a fresco* ne peut pas être réalisée sur du *djuss*. Ce support, il est vrai, n'a été analysé que ponctuellement à Mari.[34] Du temps d'André Parrot, qui a dégagé le palais et ses peintures, il n'y a pas eu d'analyses, ni

du support ni des pigments. Lors de la restauration de 80 fragments sur enduit de plâtre provenant de la cour 106, j'ai pu constater que ce support ne rendait pas les peintures résistantes comme on aurait pu l'imaginer: les noirs, par exemple, s'en allaient en poussière et en aucun cas il n'aurait été possible de nettoyer les fragments à l'eau, comme on le fait facilement pour la fresque.[35]

II. Les pigments et les couleurs

A l'occasion de la même restauration, des observations ont été effectuées à la binoculaire. La palette de base (salle 132) comprend le blanc, le noir, le gris, le rouge et l'ocre; on observe en outre du rose et du bleu sur les peintures hautes de la cour 106, et du vert sur la *peinture de l'Investiture*. Il a été intéressant de constater que pour les roses avaient été inclus soit des grains de carbone, soit du bleu. Quant au bleu lui-même, du moins en ce qui concerne les fragments de la cour 106, il s'agit bien de silicate de cuivre et de calcium, c'est-à-dire de bleu égyptien qui, comme chacun sait, est une matière de synthèse obtenue par traitement thermique à haute température de silice, de sel de cuivre et de sel de calcium. Sa grande époque de diffusion est le 2e millénaire av. J.-C., mais on en trouve déjà au 3e millénaire av. J.-C., en particulier sous forme de perles dans les tombes royales d'Ur; il apparaît en Egypte également vers 2500 av. J.-C.[36] L'examen à la binoculare ne permet pas pour les rouges des observations très fines; il s'agit vraisemblablement d'hématite.[37]

III. Le mode d'exécution

Jusqu'à l'époque hellénistique, la peinture antique ne connaît pas les effets d'ombre: la couleur est posée en aplats et le dessin cerné de noir. Des lignes-guides tracées à la pointe ont pu servir pour les contours, comme par exemple pour la *peinture de l'Investiture* (cadre et personnages centraux) ou pour le rectangle en faux marbre du sol de la salle 31.[38] Mais le procédé ne paraît pas aussi généralisé qu'en Crète, simplement parce que la technique du claquage d'une ficelle pratiqué là-bas pour obtenir une ligne droite ne peut être réalisée que sur enduit humide préparé pour de la véritable fresque.

Les témoignages de réfection sont rares – sans doute parce qu'ils n'ont pas été suffisamment cherchés. André Parrot en signale dans le décor architectural de la cour 106, et par ailleurs le revers de deux des fragments restaurés provenant des peintures hautes de cette même cour porte l'empreinte d'une peinture antérieure.[39]

C. Aspects du décor non figuratif

I. Encadrements

1. Le podium de la salle 64 (cf. **Fig. 2**)

Les dalles en faux marbre de couleur dominante ocre, certaines d'entre elles d'un bleu verdâtre, étaient entourées d'une spirale blanche sur fond ocre rouge sombre; du côté ouest jaillissaient en plus des flammes blanches et ocre jaune. Il s'agit ici non de la torsade, mais de la véritable spirale courante, à double enroulement, telle qu'on la retrouve en Crète.[40]

2. La peinture de l'investiture (cf. **Colour Pl. 3**)

Là encore, la spirale à double enroulement linéaire noir enserré dans un cadre brun, rappelle l'obsession de la fertilité, omniprésente dans ces régions qui manquent d'eau, et se fait l'écho de la figure de la déesses portant un vase aux eaux jaillissantes, répétée deux fois dans le registre inférieur du panneau central. Ce cadre, qui fait penser à un motif gravé sur bois ou sur métal, est doublé, du côté externe, par une bordure latérale de bandes de couleurs à indentations, et par une bordure festonnée qui rappelle les franges nouées en glands d'un tapis.[41]

3. Comparaisons

Ces bordures, qui font penser que la peinture est un *ersatz* de tapis – c'est déjà son rôle à Çatal Hüyük, dès le Néolithique[42] – appellent deux parallèles. Dans l'épaisseur de la porte H IV du palais H d'Aqarquf défilent des dignitaires kassites dans un panneau dont trois des côtés sont bordés de bandes multicolores agrémentées de ronds et de carrés répétés (**Fig. 4**).[43] L'évocation d'une tenture est moins nette que précédemment. A Cnossos, l'encadrement des quatre panneaux de tauromachie du palais combinent les bandes rayées et un motif veiné régulier: l'allusion au textile et à la pierre serait moins évidente si l'on n'avait pas en mémoire les prototypes proche-orientaux.[44]

Les compositions en tableaux ne sont cependant pas la règle générale: comme on l'a vu plus haut, ce sont les compositions en registres qui dominent.

II. Décor et architecture

1. Decor architectural de la cour 106 (cf. **Fig. 3**)

Bien qu'il ne soit pas le seul, c'est sur le décor architectural de la cour 106 qu'il convient de s'arrêter, parce qu'il est le plus intéressant. La blancheur de cette sorte d'écrin aux murs et au sol plâtrés était rompue par le bleu-gris d'une plinthe haute d'une cinquantaine de centimètres, et par le bandeau fait de trois bandes respectivement ocre rouge, bleu de cobalt, ocre rouge, large de 15cm au maximum et situé, on l'a vu, entre 1,82 et 2,12m de haut. Sa hauteur correspondait au sommet de la *peinture de l'Investiture* ainsi que, plus ou moins, avec la base d'un autre décor dont il n'a pas encore été question ici: il s'agit de bandes rouges horizontales (larges d'une trentaine de centimètres en moyenne), de longueurs inégales (de 0,50m à 1,63m) en superposition alternée sur les montants et dans la jouée des quatre portes secondaires latérales de la cour.

La justification de ces fausses poutres se trouve dans le remaniement bien réel de la porte nord, dont le passage avait été rétréci par l'adjonction d'une tête de mur sur son montant ouest:[45] pour que son armature de renforcement en bois ne soit pas incongrue, on l'avait répétée sur le montant oriental et intégrée dans un système décoratif en ajoutant aux autres portes des fausses poutres peintes, excepté à la porte sud où ce n'était pas possible à cause de la présence des compositions figuratives (cf. **Fig. 3**).[46] Ceci manifeste un souci d'harmonie d'autant plus remarquable que tous les éléments n'avaient pas été exécutés ni même conçus en même temps.

2. Autres exemples

L'emplacement du bandeau n'est pas toujours gratuit non plus: l'exemple le plus net à Mari en est la double torsade bleue et noire de la salle 31, de part et d'autre d'un encastrement (de poutre longitudinale?). Il est frappant qu'à Cnossos, le bandeau spiralé recouvrait parfois une longrine réelle noyée dans le mur.[47] Pour revenir au-delà des rives orientales de la Méditerranée, c'est à Alalakh que le procédé s'est révélé le plus fidèle à la réalité et le plus permanent: la structure interne du mur en pans de bois de la

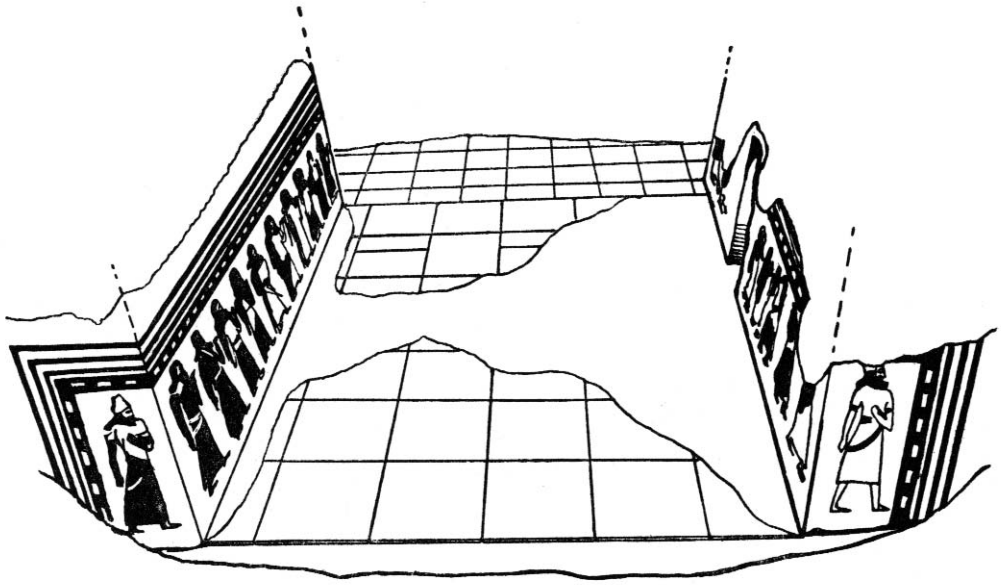


Figure 4 Aqarquf, palais H, porte du palais H-IV (Moortgat 1959 [n. 26], fig. 4 p. 13, d'après Baqir [n. 43], pl. XIII)

salle 4 du palais du niveau VII (vers 1700 av. J.-C.) se trouve comme reproduite de façon visible par la peinture dans une maison du niveau IV (vers 1450 av. J.-C.).[48]

Dans la décoration antique, certaines manières de faire peuvent nous paraître surprenantes, comme par exemple recouvrir de la pierre avec un revêtement peint en imitation de pierre: les habitants de Mari l'on fait avec le podium de la salle 64, comme ceux d'Alalakh avec une plinthe de basalte ou comme les Crétois avec certaines façades dont l'enduit incisé en quadrillage imitait un appareil isodome.[49]

3. Probleme de l'emplacement des peintures de format miniature

Il avait semblé étonnant à Sir Arthur Evans que la frise des Perdrix du 'Caravansérail' de Cnossos fût perchée bien haut au-dessus d'un décor de faux pilastres peints et des linteaux de portes.[50] A Mari, la composition de la salle 132 était tombée au pied d'un mur à l'emplacement d'une porte bouchée; elle se trouvait donc au-dessus, à 2 ou 3m du sol, ce qui fait que son bord supérieur se trouvait à 6m du sol; or le registre restitué comme l'avant-dernier comporte précisément le guerrier de format miniature. Il en va de même pour la cour 106, qui comportait également des figures de petit format, lesquelles ne pouvaient pas se situer à moins de 3m de haut.[51] A Théra, on se trouve de façon générale à une échelle bien plus réduite, mais la frise dite 'de la bataille navale' ou 'aux villes' de la maison Ouest n'est-elle pas, elle aussi, de format miniature (hauteur: 40cm), au regard des pêcheurs par exemple, qui sont à peu près grandeur nature?[52] Ce procédé fréquent de placer en hauteur des scènes que leur iconographie rendait certainement importantes, mais qui n'étaient pas forcément destinées à être perçues dans leurs détails, n'était sûrement pas dicté seulement par des raisons pratiques (utiliser l'espace disponible entre linteaux et plafond): peut-être y avait-il d'autres raisons, qui n'ont pas encore été élucidées.[53]

D. Aspects iconographiques

I. Conventions de dessin et de couleurs

1. Principe de la rotation

Il n'est pas nécessaire d'insister sur des évidences telles que la combinaison des représentations de face (œil, torse) et de profil (visage, jambes, pieds), commune à l'Egypte, à l'Egée et au Proche-Orient, et que Flavigny insère dans le principe de la rotation.[54]

2. Principe du rabattement

Largement utilisé par les Egyptiens dans leurs représentations de bassins entourés d'arbres par exemple, le procédé est connu aussi des Orientaux. Ces derniers pratiquent plus volontiers le rabattement latéral (et non de tous les côtés), qui aboutit, par exemple, à ce motif stéréotypé de type héraldique des deux capridés antithétiques de part et d'autre d'un végétal: les figures latérales y sont en quelque sorte représentées éclatées de façon à montrer les deux profils d'un seul animal. Dans cette optique, la *peinture de l'Investiture* serait une transposition de l'enfilade de la cour du Palmier 106, de la salle 64 et de la salle du Trône 65; pour que les éléments situés dans l'axe de l'observateur ne bouchent pas la vue vers les espaces en arrière-plan, le peintre avait rabattu sur les volets latéraux le palmier situé au centre de la cour, puis au registre inférieur du panneau central la statue de la déesse au vase aux eaux jaillissantes dressée sur le podium de la salle 64; ainsi le regard pouvait atteindre enfin la salle du Trône 65, où se déroulait la scène – à l'extrémité de l'enfilade, c'est-à-dire au registre supérieur du panneau central) (**Fig. 5**).[55]

3. Harmonie des proportions

Composition très savante par son expression de l'espace, la *peinture de l'Investiture* l'est aussi dans la recherche des proportions. Ayant repéré des tracés directeurs dans l'architecture, Jean Margueron a décelé le même rapport mathématique entre la longueur et la largeur du rectangle de la peinture et les proportions du plan de l'ensemble 106–64.[56]

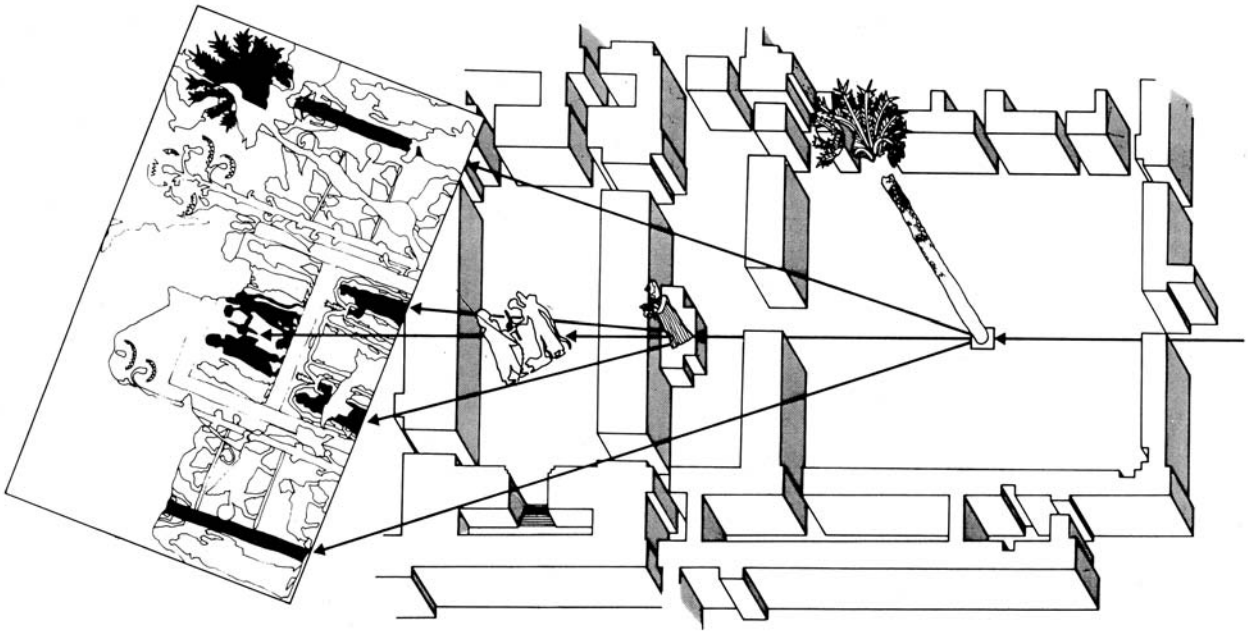


Figure 5 La peinture de l'Investiture: conventions de dessin exprimant le contexte architectural (Margueron 1992 [n. 56], pl. 47)

4. Conventions de couleurs

La distinction de la couleur des chairs – ocre rouge pour les hommes, blanc pour les femmes – systématique en Egypte et dans le bassin égéen, semble souffrir des exceptions au Proche-Orient, si l'on en croit par exemple certains visages masculins des zones hautes de la cour 106 et les peintures Til Barsip.[57] Une habitude qui paraissait typiquement minoenne, à savoir le changement de couleur de fond d'un registre à l'autre, se retrouve à Mari sur la grande composition de la salle 220' (cf. **Colour Pl. 4**).

II. Thèmes iconographiques

1. Themes religieux

En définitive, le répertoire des grands thèmes iconographiques est, au Proche-Orient, assez limité. L'un des plus fréquents, celui du banquet, qui naît en Mésopotamie à l'époque des Dynasties Archaïques, c'est-à-dire au cours de la première moitié du 3e millénaire av. J.-C.,[58] fait défaut sur les murs de Mari – ou du moins il n'en reste rien. Mais c'est bien du même schéma – personnages assis sur un tabouret, levant un gobelet – que ressortit la fameuse *Campstool Fresco* du palais de Cnossos, telle que l'a restituée Nicolas Platon, composée sur au moins deux registres, l'un à fond bleu, l'autre à fond jaune.[59]

Les scènes d'offrande ou de libation à un dieu se développent à partir de la renaissance sumérienne (2150–2003 av. J.-C.), en particulier sur les sceaux-cylindres, et c'est bien par comparaison avec une telle scène, sur une stèle cette fois, celle d'Ur-Nammu, que Moortgat a daté de cette période la composition de la salle 132 du palais de Mari.[60]

Les processions conduisant le taureau au sacrifice ne sont pas aussi fréquentes, mais peut-être peut-on rappeler une corne de taureau sur les peintures si fragmentaires d'Alalakh… .[61]

Enfin, il ne faut pas oublier un thème cher entre tous à la Mésopotamie, pays de soif: le thème des flots jaillissants qui assurent la fertilité. Il est représenté soit par le motif schématique de la spirale, soit de façon clairement figurative par une divinité dispensatrice de l'eau. Ce n'est sans doute pas un hasard si ce thème se concentre dans le secteur officiel 106–64–65: le symbolisme aquatique du cadre du podium a été rapproché, non sans raison, de la statue de la déesse aux eaux jaillissantes, dont le corps a été retrouvé au pied du podium même (cf. **Fig. 5**); cette statue, d'ailleurs, pratiquement grandeur nature, était creusée en son centre d'un canal vertical qui permettait, en certaines circonstances, d'en faire véritablement une fontaine.[62] En outre le cadre spiralé du panneau de l'Investiture et la cueillette des dattes représentée sur les volets latéraux de la peinture se répondent aussi: le roi, sous la protection des dieux, est le garant de la prospérité.[63] Intermédiaire entre son peuple et la divinité, le fait qu'il soit représenté, dans ce secteur de réceptions officielles, dans un contexte religieux, n'a rien étonnant.

2. Themes profanes: la glorification du roi

Ce sont surtout les bas-reliefs néo-assyriens des palais de Nimrud ou de Khorsabad, ou les peintures de celui de Til Barsip, qui ont rendu célèbres les défilés de tributaires apportant leurs offrandes au roi. Des processions de dignitaires s'étirent aussi sur ces murs: ceux du palais H d'Aqarquf en seraient des prototypes (cf. **Fig. 4**). Ce qu'a révélé la restitution des peintures de la salle 220', c'est que, un millénaire avant les Assyriens, le roi de Haute Mésopotamie – si c'est bien à Iasmah-Addu qu'il faut imputer cette œuvre – concevait déjà le programme iconographique qui deviendra alors stéréotypé et auquel feront écho les inscriptions: le roi y est représenté dans ses quatre grandes fonctions, à savoir de bâtisseur, de chasseur de lion, de vainqueur piétinant ses ennemis et enfin, d'hôte accueillant les tributaires qui lui apportent le fruit de sa victoire. Pris isolément, ces thèmes sont plus anciens, mais pour la première fois ils se trouvent ici réunis, précisément dans les appartements où le souverain tient ses réceptions privées.

E. Conclusion

Les peintures du palais de Mari sont un maillon de la chaîne qui illustre la permanence des thèmes iconographiques du Proche-Orient ancien. Leur tradition s'ancre dans le milieu du 3e millénaire av. J.-C., ou même plus tôt: l'art de Çatal Hüyük (8e millénaire av. J.-C.) connaît déjà le motif de la torsade, les fausses

tentures peintes sur les murs, la composition héraldique. Sous-jacente à l'iconographie, il y a l'architecture: les palais à l'apparence labyrinthique existent dès le 27e s. av. J.-C. en Mésopotamie, alors que la Crète, qui s'en inspire, construit ses premiers palais vers 2000 av. J.-C. seulement.

La cité de Mari, fondée au 29e s. av. J.-C. sur l'Euphrate pour contrôler le trafic commercial, était bien placée pour recevoir et diffuser des biens matériels et des influences culturelles propres aussi bien au Golfe arabo-persique qu'à la Syrie du Nord ou aux franges méditerranéennes: Zimri-Lim, dernier roi de Mari, reçoit une lettre lui faisant savoir que le roi d'Ugarit, sur la côte, veut visiter son palais; les Crétois (Keftiu) sont mentionnés dans les textes, apportant des présents. Certes, une vision plus précise du décor mural des premiers palais crétois fait cruellement défaut pour apprécier le sens des relations en ce domaine; mais la longue tradition architecturale syro-mésopotamienne milite pour son antériorité, et la récente tentative d'abaissement de la chronologie mésopotamienne ne change rien aux données du problème.

Les fragments de peintures du palais du niveau VII d'Alalakh (vers 1700 av. J.-C.) ont fait couler beaucoup d'encre, et W.-D. Niemeier vient de montrer une restitution qui les attire encore davantage dans la sphère minoenne. Autant que l'on puisse en juger par l'échantillonnage réduit qu'elles représentent, ces peintures sont d'un style qui n'est évidemment pas mésopotamien. Mais l'apport essentiel des Crétois en ce domaine me paraît bien être la technique de la véritable fresque, inconnue jusque là au Proche-Orient, et dont les fouilles de Tel Kabri, en Palestine, ont donné récemment un second exemple, contemporain.

Sans doute est-ce le moment où s'amorce le tournant qui mènera à l'art international du Bronze Récent – les peintures minoïsantes d'Avaris en témoignent et n'a-t-on pas trouvé, dans les années '90, près de l'aéroport de Damas, les fragments d'une peinture très égyptisante?[64] Le Proche-Orient devient alors plus réceptif à la Méditerranée, mais au IIIe et au début du IIe millénaire av. J.-C. il me paraît davantage ancré dans ses propres traditions et diffuser son rayonnement vers l'ouest.

Abréviations

Parrot 1958: A. Parrot, *Mission archéologique de Mari,* volume II, *le Palais*, tome 1: *architecture*; tome 2: *les peintures* murales (Paris, 1958).

Margueron 1982: J. Margueron, *Recherches sur les palais mésopotamiens de l'âge du Bronze* (Paris, 1982).

Notes

1 Sous le nom de Pierre: B. Pierre, 'Décor peint à Mari et au Proche-Orient. I: la cour 106 du palais de Mari – les enjeux de la technique', *M.A.R.I.* 3 (1984), 223–54; B. Pierre, 'Décor peint à Mari et au Proche Orient. II: Chronologie, contexte, significations', *M.A.R.I.* 5 (1987), 551–75.

2 Parrot 1958 II.2, 110.

3 Cf. par exemple le relief de Dudu: P. Amiet, *L'Art antique du Proche-Orient* (Paris, 1977), fig. 337. Des fragments de peinture de Tell-i Malyan (Iran) montrent dès 3000 av.J.-C. une frise décorative faite de deux rangs de sortes de S, ou de torsades étirées; cf. A. Nunn, *Die Wandmalerei und der glasierte Wandschmuck im alten Orient* (Leyde, Copenhague, 1988), pl. 55.

4 Cf. par exemple l'empreinte de sceau proto-élamite n° 593 (P. Amiet, *La glyptique mésopotamienne archaïque.* Deuxième édition revue et corrigée avec un supplément [Paris, 1980], 43) ou celles de Syrie (Amiet, ibid., pl. 85bis E et n° 1647 à 1649).

5 En référence à la chronologie égéenne la plus communément admise (qui place la construction des premiers palais vers 2000 ou 1900, celle des seconds vers 1700 av. J.-C.) et à la chronologie mésopotamienne dite moyenne.

6 Par exemple, à Phaestos (premier palais et maisons), des motifs géométriques parmi lesquels probablement des fragments de spirales, cf. D. Levi, *Festos e la civilta minoica* (Rome, 1976) vol. I.1, pls LXXXV, LXXXVI; fig. 142 p. 106.

7 M. Bietak, 'Connections between Egypt and the Minoan World. New results from Tell el-Dab'a/Avaris', in: W.V. Davis et L. Schofield (éd.), *Egypt, the Aegean and the Levant, Interconnections in the Second Millennium BC* (Londres, 1992), 19–27.

8 Résumé de l'état de la question, cf. R. Treuil, P. Darcque, J.-Cl. Poursat, G. Touchais, *Les civilisations égéennes du Néolithique à l'âge du Bronze* (Paris, 1989), 110–11, 363–74. Cf. aussi W.D. Niemeier, 'New Archaeological Evidence for a 17th Century Date of the 'Minoan Eruption' from Israel (Tel Kabri, Western Galilee)', in: D.A. Hardy and A.C. Renfrew (éd.), *Thera and the Aegean World* III (Londres, 1990), vol. 3: *Chronology*, 120–6.

9 H. Gasche, J.A. Armstrong, S.W. Cole and V.G.Gurzadyan, *Dating the Fall of Babylon. A Reappraisal of Second-Millennium Chronology*. Mesopotamian History and Environment, series II, Memoirs IV (University of Ghent and the Oriental Institute of the University of Chicago, 1998); iid., 'A Correction to Dating the Fall of Babylon. A Reappraisal of Second-Millennium Chronology', *Akkadica* 108 (MHEM 4; Ghent and Chicago, 1998), 1–4.

10 Pour la publication des peintures, cf. M.-Th. Barrelet, 'Une peinture de la cour 106 du palais de Mari', *Studia Mariana* (Leyde, 1950), et surtout Parrot 1958 II.2. Pour les nouvelles interprétations et les restitutions du palais, cf. Margueron 1982, en particulier 209–379; J. Margueron, 'Du nouveau sur la cour du Palmier', *M.A.R.I.* 5 (1987), 463–82; J.-M. Durand et J.-Cl. Margueron, 'La question du harem royal dans le palais de Mari', *Journal des Savants* (octobre-décembre 1980), 253–80.

11 A. Parrot, 'Les fouilles de Mari, sixième campagne (automne 1938)', *Syria* 1940–41, 1–28, fig. 14 p. 20. Il s'agit de personnages schématiquement silhouettés en noir.

12 La diversité des matériaux utilisés pour le revêtement des murs est à elle seule un décor (enduit de terre ocre, plâtre blanc tirant plus ou moins vers le gris, chaux blanche, bitume noir), mais il n'en sera pas tenu compte dans la présentation sommaire qui va suivre.

13 Il y avait bien un second accès, mais il était réservé aux véhicules et conduisait aux magasins généraux situés à l'arrière du palais.

14 Cf. Parrot 1958 II.2, 70–82 et pl. E; Margueron 1982, 331–2; J.-M. Durand, 'L'organisation de l'espace dans le palais de Mari: le témoignage des textes', in: E. Lévy (éd.), *Le Système palatial en Orient, en Grèce et à Rome* (Colloque du CRPOGA 1985; Strasbourg 1987), 71–4.

15 Cf. Margueron 1987 (n. 10), 469–80.

16 Cf. Parrot 1958 II.2, 19–52. Dans un article très novateur, Dominique Parayre établit les modules des personnages et propose, outre un regroupement iconographique, l'extension en hauteur des peintures: D. Parayre, 'Les peintures non en place du palais de Mari, nouveau regard', *M.A.R.I.* 1 (1982), 31–78, en particulier 49–65. Cependant pour ma part (sous le nom de Pierre 1984 [n. 1], 238–41), je ne suis pas d'accord sur leur agencement ni leur emplacement, qu'il faut situer plus haut qu'elle ne le fait.

17 Une tentative de restitution est en cours, que j'ai présentée au 2e Congrès International sur l'Archéologie du Proche-Orient Ancien (2Icaane; Copenhague, 22–26 mai 2000). Pour les grandes lignes de cette proposition, cf. B. Muller, 'Hommes et dieux dans les peintures du palais de Mari', *Orient-Express* 2002 vol. 3, 82–8.

18 Le terme empoloyé par André Parrot est suggestif, mais impropre dans la mesure où les volets latéraux ne sont pas mobiles.

19 La continuité de la composition observée à partir des fragments tombés de part et d'autre du mur séparant les magasins 220 et 219 a été un des éléments qui ont contribué à la restitution de l'étage de ce secteur. Cf. Margueron 1982, 338–9; B. Pierre-Muller, 'Une grande peinture des appartements royaux du palais de Mari (salles 219–220)', *M.A.R.I.* 6 (1990), 433–52; J. Margueron, B. Pierre-Muller et M. Renisio, 'Les appartements royaux du premier étage dans le palais de Zimri-Lim', *M.A.R.I.* 6 (1990), 433–52.

20 Durand et Margueron (n. 10), 278–80; Margueron 1982, 344–5.

21 Parrot 1958 II.2, 10–2.

22 Cf. Parrot 1958 II.2, 67.

23 Parrot 1958 II.1, 165–7.

24 Pour la chronologie absolue, les dates indiquées ici se réfèrent à la chronologie moyenne. Si l'on adopte le nouveau système de Gasche *et al.* (n. 9), rabaisser toutes les dates de 96 ans.

25 1761 selon la chronologie moyenne généralement adoptée, 1665 si

l'on admet les révisions de Gasche *et al.* (n. 9).

26 Cf. A. Moortgat, *Die altvorderasiatische Malerei* (Berlin, 1959); id., *Die Kunst des Alten Mesopotamien* (Cologne, 1967); Margueron 1982, 378. Par exemple (cf. Pierre 1987 [n. 1], 556–7) la salle du Trône 65 avait, dans son dernier état, son sol couvert de terre battue et ses murs de trois enduits argileux, alors que la phase précédente était plâtrée (sol et plinthe); dans la pièce 7, l'enduit de boue et paille hachée de la phase finale en masquait un de plâtre.

27 La chronologie des *Shakkanakku* (2226–1938 ou 1912 av. J-C.) selon la chronologie moyenne, a été précisée par J.-M. Durand, 'La situation historique des Sakkanakku: nouvelle approche', *M.A.R.I.* 4 (1985), 147–72 (tableau chronologique p. 156). Sur l'inscription de Hanun-Dagan, cf. Margueron 1982, 377. Sur la chronologie relative des secteurs architecturaux, cf. Margueron 1982, 377–9.

28 Par exemple dans la cour 106 on voit, sous l'écaillure d'un bandeau rouge de porte, la présence du triple bandeau bichrome (cf. Parrot 1958 II.1, fig. 94 p. 90).

29 Cette séquence a été contestée par Tomabechi 1981 qui, sur l'idée théorique d'une durée de vie éphémère de l'architecture de terre, rabaisse toutes les dates: pour lui, les peintures de la salle 132 dateraient de Iasmah-Addu (1795–1775 av. J.-C.) et les peintures hautes de la cour 106 seraient inachevées. J'ai développé l'argumentation de cette chronologie relative sous le nom de Pierre 1987 (n. 1), 551–61.

30 L'argumentation stylistique de Moortgat, qui conforte la datation de Parrot, en faveur d'une date récente (torse presque de profil, costume, couleur verte) est forte, mais ne résiste pas à la question de la nature du support, qui ne peut plus être vérifiée: Jean Margueron s'est demandé si cette peinture, appliquée directement sur l'enduit de terre du mur, n'aurait pas été réservée au moment de la pose des couches de plâtre qui revêtent l'ensemble des murs et sur lesquelles sont peintes les compositions hautes, car il conçoit mal l'intérêt d'un enduit de terre succédant à une couche de plâtre (cf. J. Margueron, 'La peinture de l'Investiture et l'histoire de la cour 106', in: Ö. Tunca (éd.), *De la Babylonie à la Syrie, en passant par Mari. Mélanges offerts à Monsieur J.-R. Kupper à l'occasion de son 70e anniversaire* [Liège, 1990], 122): par conséquent la *peinture de l'Investiture* serait antérieure aux réfections de la cour 106 à l'issue desquelles avaient été réalisées les grandes compositions hautes sur plâtre (Margueron, ibid., 124). Pour ma part, cet argument ne me paraît pas décisif car le cas se rencontre à la salle de bains 7 (terre sur plâtre, cf. Parrot 1958 II.1, 205 et fig. 37). Cependant les observations stylistiques exprimées par Moortgat en faveur d'une date tardive méritent d'être réévaluées face au mauvais état de cette peinture (incendiée).

31 L. Woolley, *Alalakh. An account of the Excavations at Tell Atchana in the Hatay* (Oxford, 1955), 233–4; A. Kempinski et W.D. Niemeier, *Excavations at Kabri. Preliminary Report of 1989 Season*, 4 (Tel Aviv, 1990), p. XVI.

32 La fresque véritable (*buon fresco*) est exécutée sur enduit humide à base de chaux; les pigments s'y fixent par carbonatation et se trouvent alors enrobés dans la cristallisation de calcite, devenant partie intégrante du substrat calcaire. Pour les résultats les plus récents d'analyses physico-chimiques sur des peintures du bassin égéen, cf. Alain Dandrau, *La construction en terre dans le monde égéen au Néolithique et à l'âge du Bronze: les matériaux et leurs propriétés*, thèse de doctorat soutenue le 16 juin 1997 à l'Université de Paris I sous la direction de M. le Professeur René Treuil. Je suis redevable à Mme Alix Barbet, Directeur du Centre d'Etudes des Peintures Murales Romaines, de certaines précisions concernant les critères d'identification des fresques antiques; en effet, la résistance d'une peinture à l'aspersion d'eau n'indique pas forcément qu'il s'agisse d'une véritable fresque: une peinture sur support de plâtre ne peut pas être une fresque, mais selon le liant employé, elle peut résister à l'eau; par ailleurs il peut arriver que le phénomène de carbonatation des pigments sur enduit de chaux, qui caractérise la fresque véritable, se soit fait accidentellement lors de l'enfouissement. Il faut par conséquent être très prudent dans l'identification d'une fresque; en tout cas le 'jeu de palets' de la salle 31 du palais de Mari, peint sur un sol de plâtre, ne peut en aucun cas être une fresque comme l'affirmat Parrot 1958 II.1, 165–7.

33 Pour l'inventaire exhaustif, cf. Pierre 1987 (n. 1), 553–61.

34 Analyse par diffraction de rayons X effectuée par le Laboratoire de recherche des Musées de France, résultat: $CaSO_4\,2(H_2O)$.

35 Restauration effectuée par le Centre d'Etude des Peintures Murales Romaines, sous la direction de Mme Alix Barbet, pour le musée du Louvre à la demande de Mme Annie Caubet, cf. B. Muller-Pierre, 'Des peintures fragmentaires de la cour 106 du palais de Mari restaurées pour le musée du Louvre', *M.A.R.I.* 7 (1993), 355–8.

36 D. Ullrich, 'Egyptian Blue and Green Frit: Characterization, History and Occurrence, Synthesis', in: F. Delamare, T. Hackens et B. Helly (éd.), *Datation-caractérisation des peintures pariétales et murales*, PACT 17, Cours postgradué européen, revue du groupe européen d'études pour les techniques physiques, chimiques, biologiques et mathématiques appliquées à l'archéologie (Ravello, 1987), 326–8.

37 Communication orale de M.V. Guichard, conservateur du musée de Roanne.

38 Parrot 1958 II.2, 58; II.1, 166.

39 Parrot 1958 II.1, fig. 94 p. 90; Muller-Pierre (n. 35), 355 n. 6.

40 Parrot 1958 II.2, 67–9. Les enroulements de la spirale sont ocre jaune du côté sud.

41 A. Moortgat, 'Teppich und Malerei zur Zeit Hammurabis. Bemerkungen zum grossen Wandgemälde aus Mari', *Bibliotheca Orientalis* 9 (1952), 92–3, repris par Parrot 1958 II.2, 53 n. 2.

42 Cf. J. Mellaart, *Çatal Hüyük, une des premières cités du monde* (Paris, 1971), pls 29–34; fig. 24 p. 111.

43 T. Baqir, 'Iraq Government Excavations at Aqarquf', *Iraq* 8 (1946), en particulier pl. XIII, reprise par Moortgat 1959 (n. 26), fig. 4 p. 13.

44 Cf. A. Evans, *The Palace of Minos at Knossos* III (Londres, 1930), figs 143, 144 et 148; id., *The Palace of Minos at Knossos* IV.2 (Londres, 1935), fig. 11.

45 Cf. Parrot 1958 II.1, 83–6 et Margueron 1982, fig. 162: les encastrements des poutres ont été retrouvés, avec des traces de peinture rouge. La porte sud avait aussi été rétrécie, tout ceci pour compenser le doublage du mur ouest de la cour, de façon à garder pour ces portes leur emplacement à l'exact milieu du mur, cf. Margueron 1987 (n. 10), fig. 7 p. 476.

46 Cf. Pierre 1984 (n. 1), 227–31.

47 Cf. Evans 1935 (n. 44), 648, 650 et fig. 633 (magasin IX); Evans 1930 (n. 44), fig. 216 et 225 (*hall aux doubles Haches*).

48 Cf. Woolley (n. 31), fig. 71 p. 226: structure interne de l'angle sud-est de la pièce 4 du palais (niveau VII); Woolley, ibid., pl. XXXIX.b et c: peinture imitant une plinthe de basalte surmontée, à quelque distance, d'une longrine surmontant des abouts de poutres transversales (maison 39A, pièce 6, niveau IV).

49 Cf. par exemple palais de Phaestos, corridor 41: L. Pernier et L. Banti, *Il Palazzo minoico di Festos* vol. II (Rome, 1951), fig. 139 p. 225.

50 A. Evans *The Palace of Minos at Knossos* II.1 (Londres, 1928), fig. 49 et p. 200.

51 Pierre 1984 (n. 1), 238.

52 Cf. S. Marinatos, *Excavations at Thera* VI (1972 Season) (Athènes, 1974), 38sqq.

53 Sur l'organisation du décor de Théra, cf. C. Televantou, *Akrotiri Thiras. Oi toichographies tis Dutikis oikias* (Athènes, 1994), 143.

54 C. Flavigny, *Le dessin de l'Asie occidentale ancienne* (Paris, 1940), 14. Le principe est plus strict en Egypte qu'au Proche-Orient, qui applique des nuances, comme par exemple sur la *peinture de l'Investiture*, où le roi a le torse presque de profil, contrairement à Ishtar. Les visages sont de face pour les figurines en terre cuite estampées du IIe millénaire, et pour certaines figures mythiques (palais de Mari, salle 132: personnage noir sur fond étoilé).

55 Que cette peinture ait représenté un espace précis d'un temple, ou plutôt le palais lui-même a été proposé d'emblée par Barrelet (n. 10) et Parrot 1958 II.2, 62–4. L'idée d'une composition très savante utilisant ces procédés de dessin a été émise par J. Margueron, 'La peinture de l'Investiture: rythme, mesures et composition', in: B. Hrouda, S. Kroll et P. Z. Spanos (éd.), *Von Uruk nach Tuttul. Eine Festschrift für Eva Strommenger, Studien und Aufsätze von Kollegen und Freunden* (München et Wien, 1992).

56 Margueron (n. 55), pl. 44 et 45.

57 Cf. Muller-Pierre (n. 35), fig. 1 p. 357; palais de Til Barsip (VIIIe s. av. J.-C.): cf. Amiet (n. 3), pl. 106.

58 Cf. par exemple le célèbre 'Etendard d'Ur', conservé au British Museum.

59 N. Platon, 'Symboli eis tin spoudin tis minoïkis toichographias', *Kretika Chronika* 13 (1959), 318–40, pl. 63.

60 A. Moortgat, 'Die Wandgemälde im Palaste zu Mari und ihre historische Einordnung', *Baghdader Mitteilungen* 3 (1964), 68–74, en particulier 72sqq; id. 1967 (n. 26), 77sqq.

61 Cf. Woolley, (n. 31), pl. XXXVIII.

62 Parrot 1958 II.2, 69.

63 Gudéa, gouverneur de Lagash en Mésopotamie au 22^{e} s. av. J.-C., s'est fait représenter, entre autres statues, tenant un vase aux eaux jaillissantes.

64 Tell Sakka, cf. A. Taraqji, 'Saqqa', *AJA* 95 (1991), 727.

Aspects of Bronze Age Trade

Dominique Collon

The excavation of the Late Bronze Age shipwreck at Uluburun near Kaû, off the Lycian coast of southern Turkey, has opened a small window on the scale and extent of East Mediterranean trade. A date of 1305 BC has been established by dendrochronology for a twisted piece of cedar which may have been carried as dunnage or firewood, and was therefore probably recently cut.[1]

According to Pulak's[2] summary of the finds after the excavation was completed, the wreck carried 354 oxhide ingots of copper and more than 130 ingots of other shapes, totalling about 10 tons of copper, and about 1 ton of tin in smaller ingots of various shapes. Other raw materials included some 175 glass ingots (cobalt blue, turquoise and lavender), logs of cedar (from Lebanon), blackwood (from Africa; called ebony by the Egyptians), terebinth resin, orpiment (probably from the Upper Euphrates), an elephant's tusk and a section of another, 13 hippopotamus teeth, murex opercula (perhaps used in the manufacture of incense) and tortoise carapaces (perhaps for lyre or lute soundboxes). Almonds, pine nuts, figs, olives, grapes or raisins, safflower, black cumin, coriander, pomegranates, wheat and barley are also attested.

There were large numbers of manufactured goods. Copper/bronze vessels were poorly preserved but there was a fine bi-conical gold chalice of uncertain origin and four Levantine faience drinking cups, three with ram's heads and one with a female head. A bronze female figurine with head, neck, hands and feet covered with gold may have originated in Syria or Palestine. Two duck-shaped ivory cosmetic boxes are of Levantine type, a trumpet carved in the shape of a ram's horn from a hippopotamus incisor has parallels at Ugarit and there was also an ivory cosmetic spoon. Egyptian objects of gold, electrum, silver, steatite and other stones were also found.

There were 37 items of gold jewellery (some recognisably Canaanite or Egyptian), more than two-dozen sea-shell rings which had originally had inlay set in bitumen (the latter probably from a source near Hit in Iraq) and thousands of beads of quartz (including carnelian), Baltic amber, gold, bone, seashell, ostrich-egg, faience and glass.

In addition to a stone ceremonial sceptre-axe of north Balkan origin and a long pin of Balkan or Greek manufacture, there were arrowheads, spearheads, maces, a shaft-hole axe, an armour scale, Aegean curved knives, and daggers and swords of Canaanite, Mycenaean and possibly Italian types, some with ivory and blackwood hilt elements surviving. Awls, chisels, drill bits, a saw, a pair of tongs, axes, adzes, whetstones, sickles and a ploughshare were found; these are mostly of Near Eastern or generally East Mediterranean types although some chisels, two double-axes and razors may be Aegean. Lead net sinkers, netting needles, a fish spear and trident were used for fishing. The metrology of the large variety of zoomorphic weights and more than 120 other weights of bronze and stone is still being studied but the dominant weight system seems to have been that used at Ugarit and on Cyprus; two pairs of what appear to be scales for balances were found. There were also wooden writing boards with ivory hinges.

The pottery carried included at least 149 Canaanite amphorae of different sizes containing glass beads, olives and large quantities of terebinth resin, 10 Cypriot pithoi of which three contained some 135 items of new Cypriot pottery and some two dozen items of Mycenaean pottery, including the ubiquitous stirrup-jar. Mycenaean wares continue to be found throughout the eastern Mediterranean, for instance at Kilise Tepe in Turkey, some 50 km up the Calycadnus River inland from Silifke.[3]

Seals are a good indicator of trade contacts and the Uluburun ship carried a number. There were two Mycenaean seals. Several scarabs were found, including one with the name of Tuthmosis I and a gold scarab with the name of Nefertiti. Two cylinder seals were carved in a Kassite-related style but were made of rock-crystal which is an unusual material for cylinder seals at this period – in one case with two gold caps preserved.[4] Another gold cap was preserved on a tiny stone seal (unpublished) with a very fine engraving of two figures holding an ear of wheat(?) between them; one of these figures had a decorated robe and his hair shaved with the exception of a side lock and of a lock of hair at the back of his head. Two of the faience cylinders (so-far unpublished) are the most western representatives of a distinctive style with examples from Assyria (3), northern Syria (1), Lebanon (1), Israel (2) and Cyprus (1).[5] There was also a haematite cylinder seal of the Old Babylonian period which had been recut by Middle Assyrian craftsmen in the middle of the 14th century BC with later additions at the very end of the century.[6]

In view of the mixed origins of the goods carried on the ship, its home port and destination must be matters for conjecture, but it may have been heading west after sailing from a (north?) Levantine port and it may have carried two high-ranking Mycenaeans.[7] In this paper I propose to examine some other perplexing features of interaction in the countries bordering the eastern Mediterranean during the Bronze Age, and their chronological anomalies.

Lapis lazuli was one material which was not found on the wreck but which, during the 14th century BC, was the subject of royal correspondence and diplomatic exchange. It is frequently

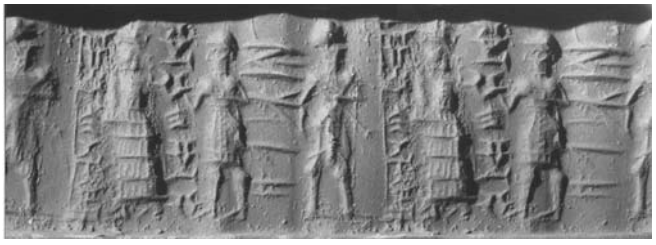


Figure 1 Impression of a cylinder seal with an added Cypro-Minoan inscription; British Museum ANE 104467; lapis lazuli; 2.15 x 0.95cm

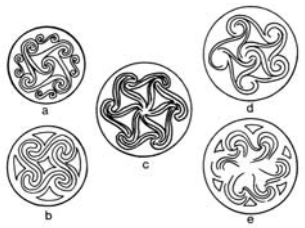


Figure 2a-b Stamp seal impressions from Lerna (after Heath 1958 [n. 12], S47 and S46).; **2c** Stamp seal impression from Phaestos (after Levi [n. 16], fig. 216); **2d-e** Stamp seal impressions from Karahöyük near Konya (after Alp [n. 13], figs 185 and 183)

Figure 3a Roundel on a Kamares Ware vessel from Phaistos (after Higgins [n. 15], 28, fig. 13); **3b-c** Seal impressions from Lerna (after Heath 1958 [n. 12], S28 and S36)

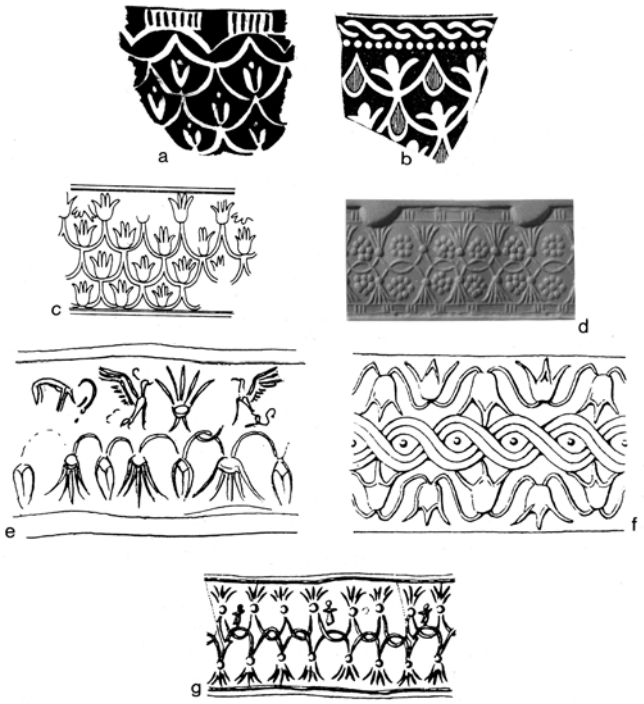


Figure 4a Part of the design on a Kamares Ware bowl from Phaistos (after Buchholz and Karageorghis [n. 17], colour-pl. 1, no. 890). **4b** Kamares Ware sherd from Ugarit (after Buchholz and Karageorghis [n. 17], 69, fig. 27). **4c** Cylinder seal impression from Level VII at Alalakh; original height 1.3cm (from D. Collon, *The Seal Impressions from Tell Atchana/Alalakh* [Alter Orient und Altes Testament 27; Kevelaer and Neukirchen/Vluyn, 1975], no. 164). **4d** Cylinder seal from Carchemish; British Museum ANE 116145; haematite; 2.05 x 0.95cm. **4e-g** Cylinder seals from Ugarit: **4e** white limestone; 2.2 x 0.85cm; **4f** grey steatite; 2.4 x 0.9cm; **4g** black steatite; 1.7 x 0.7cm (from P. Amiet, *Corpus des cylindres de Ras Shamra - Ougarit II, Sceaux-cylindres en hématite et pierres diverses* (Ras-Shamra – Ougarit IX; Paris, 1992), nos. 440-442)

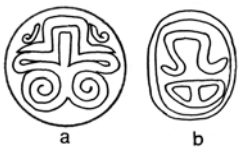


Figure 5a Impression from Lerna (after Heath 1958 [n. 12], S49); **5b** Seal from Kültepe in central Turkey (after Boehmer and Güterbock [n. 19], fig. 27n).

requested by the Egyptian pharaohs in the Amarna correspondence, and almost always 'genuine lapis lazuli' is specified. This is because the stone was being imitated in blue glass and there were, indeed, ingots of blue glass on the Uluburun ship. The glass seals of two otherwise unknown kings of Sidon have survived and they were long thought to be of lapis lazuli because their brilliant blue colour has not faded;[8] they probably belong to the 13th century BC. The most spectacular evidence for the way lapis lazuli was treasured as a raw material comes from two hoards: one of the 19th century BC found at Tod in Egypt and one, probably of the 13th century BC, from Thebes in Greece.[9] Two cylinder seals are probably further examples of such exchanges of lapis lazuli. One was found at Knossos but is in a style that is neither clearly Syrian nor Aegean; it probably dates to the late 3rd millennium BC .[10] The other (**Fig. 1**) dates to the Old Babylonian period (*c.* 1850–1750 BC) with an added figure, a recut cuneiform inscription bearing the name and patronymic of the Hurrian owner, and an added Cypro-Minoan inscription.[11]

The Uluburun shipwreck and the seal hoards illustrate two means whereby objects and individual motifs travelled in the East Mediterranean world. The good preservation of seals make them the best surviving evidence for many such transfers. Although they are separated by several centuries, there are perplexing similarities between the stamp seal impressions from Lerna in the Argolid (*c.* 2200 BC)[12] and those from Karahöyük near Konya in central Turkey (*c.* 1750 BC)[13] (**Fig. 2**); even the buildings where the sealings were found have similar plans.[14] Lerna-type designs are also found on a Kamares Ware vessel from Phaistos of the early 2nd millennium BC (**Fig. 3**)[15] and Phaistos, too, has produced stamp seals and impressions related to those from Lerna and Karahöyük (**Fig. 2c**).[16] A design of linked buds appears on another Kamares Ware vessel from Phaistos, on a Kamares Ware sherd from Ugarit,[17] on a seal impression of *c.* 1720 BC from Alalakh, on a seal of about the same date from Carchemish in northern Syria, and on supposedly Late Bronze Age seals from Ugarit (**Fig. 4**). An unusual asymmetrical sealing from Lerna[18] recalls a class of relief faience stamp seals widely distributed from Gordion in Phrygia to Jericho in Palestine (**Fig. 5**).[19]

Athletes, resembling those on Aegean wall-paintings and artefacts, appear on Syrian cylinder seals throughout the Bronze Age. The earliest Syrian examples antedate those from the Aegean but both may illustrate itinerant athletes who travelled throughout the eastern Mediterranean and, in some cases, were involved in bull-leaping (**Fig. 6**).[20] One of the Late Bronze Age seals (**Fig. 7**) depicts two such athletes approaching a goddess who is armed with a sword and who is sitting on a throne with her feet resting on a couchant lion; behind is a reclining gazelle supporting a rearing crested bird-griffin which rests its forepaws on the back of the throne in a posture clearly reminiscent of that of the griffin on the earlier 'Goddess' wall-painting from Xeste 3 at Akrotiri on Thera.[21] Two cylinder seals from Tomb 37 at Enkomi show bird-griffins in two different styles: in a Near Eastern Mitannian-related style confronting a lion, and in an Aegean style pursuing a gazelle (**Fig. 8**).[22] A Late Minoan/Mycenaean stamp seal, showing a cow simultaneously giving birth, licking her calf and suckling, was excavated at Tell Brak in northeastern Syria, reputedly on the floor of a courtyard of the Palace of Naram-Sin (*c.* 2250 BC) (**Fig. 9**).[23]

Some motifs are found on other artefacts as well as seals. A distinctive motif which I have called the 'scroll cross' appears on

Figure 6 Impression from Level VII at Alalakh; height of seal originally c. 2.6cm (from Collon [as in Fig 4.c], no. 111)

Figure 7 Impression of cylinder seal Vienna KHM AS X 183; haematite, 1.6 x 0.8cm

Figure 8 Impressions of cylinder seals from Tomb 37 at Enkomi.
8a Mitannian style; British Museum GR 1897.4-1.164; black stone with pitted surface; 1.9 x 0.9cm
8b Aegean style; British Museum GR 1897.4-1.163; haematite with gold cap; 1.9 x 0.7cm

Figure 9 Seal and enlarged impression of a Late Minoan/Mycenaean oval seal with flat base, slightly domed back with a slight longitudinal ridge; perforated longitudinally; excavated at Tell Brak in northern Syria. British Museum ANE 126273; speckled grey stone; 3.5cm long

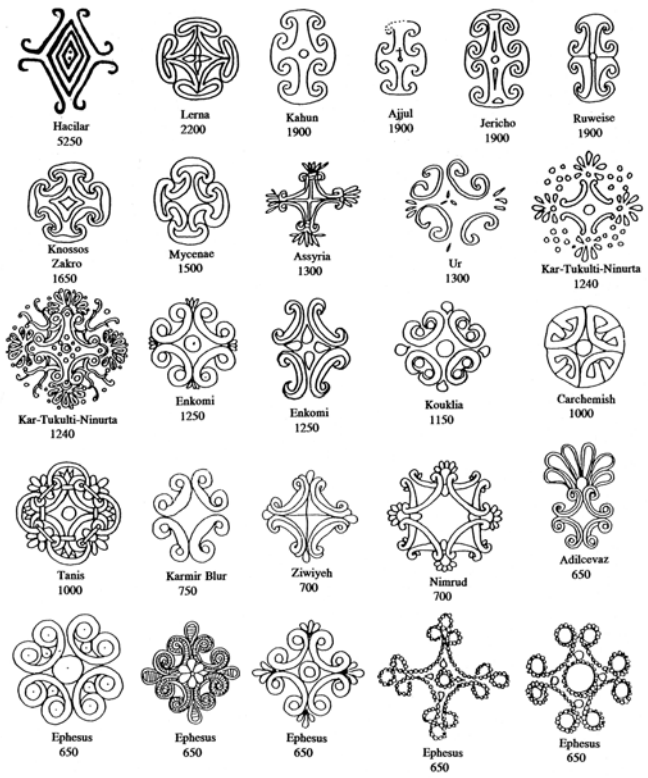


Figure 10 The 'Scroll Cross' (after Collon [n. 24], fig. 1)

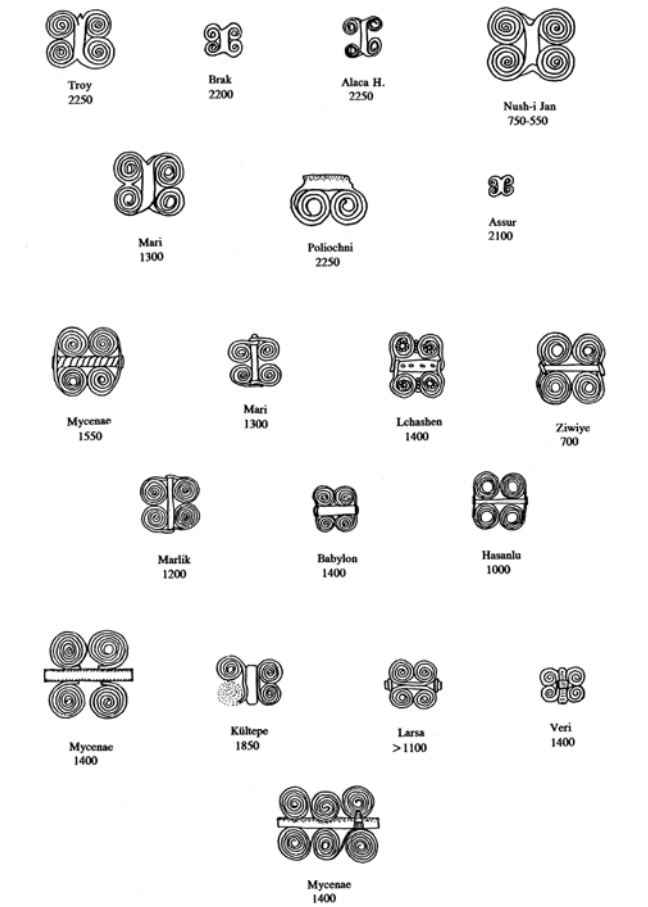


Figure 11 Quadruple spiral beads. Dates BC are approximate and refer to the context and not necessarily to the bead (after Huot *et al*. [n. 25], fig. 1; reproduced courtesy of the British School of Archaeology in Iraq)

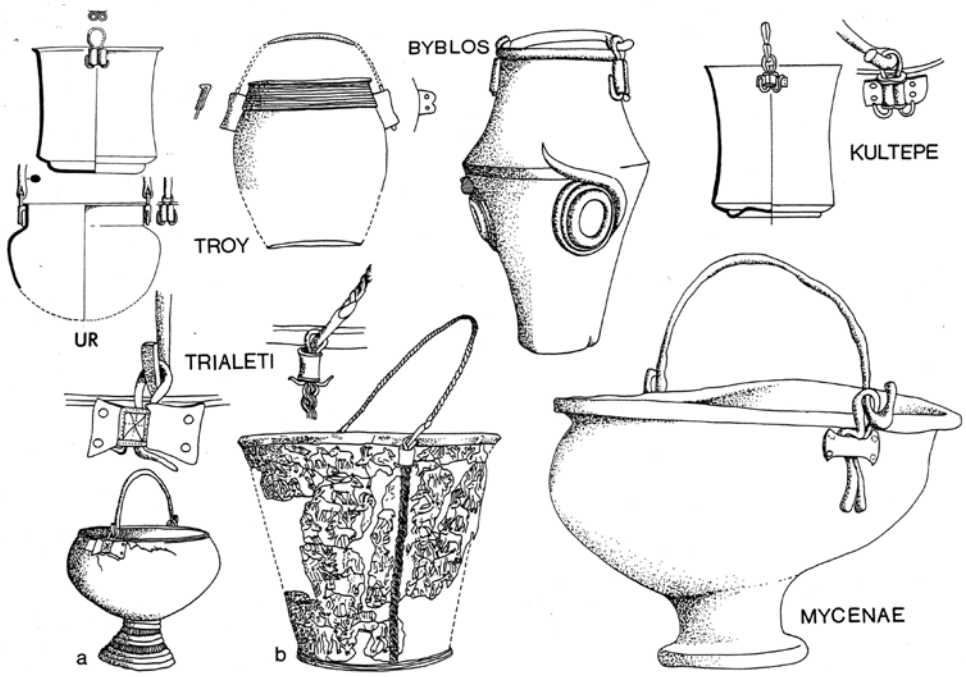


Figure 12 Bucket-handle attachments (after Collon [n. 26], figs 1-2; reproduced courtesy of the British School of Archaeology in Iraq)

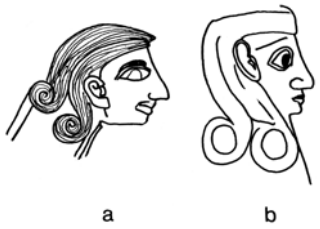


Figure 13a Terminal of the Aegina pectoral (after Higgins [n. 15], fig. 45); **13b** Head of one of the sphinxes from Acemhöyük (after Decamps de Mertzenfeld [n. 28], pl. CXXV, no. 1087a)

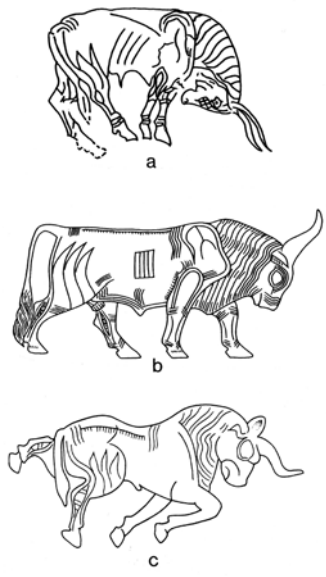


Figure 14a Bull on the ivory disc from Ekron (after Dothan and Gitin [n. 33], 13); **14b** Bull on an ivory of the 'Flame and Frond School' excavated at Nimrud (from Herrmann [n. 34], 87, fig. 1b, reproduced courtesy of the British School of Archaeology in Iraq); **14c** Bull (turned through 90°) from a small stone slab from Tell Halaf (from Herrmann [n. 34], 99, fig. 4c, reproduced courtesy of the British School of Archaeology in Iraq)

seals, pottery, sculpture and items of jewellery throughout the Near East and Aegean world with a chronological range from 5500 to 650 BC (**Fig. 10**).[24] Quadruple beads have frequently been evoked as evidence for long-distance trade contacts over the centuries (**Fig. 11**).[25] Metalwork also provides examples of the transmission of larger technical features such as a particularly distinctive type of handle attachment combining metal tubes and holdfasts (**Fig. 12**).[26] The profile heads with double curls on the ends of the pectoral from Aegina[27] look very much like those of the seated ivory sphinxes from Acemhöyük in central Anatolia and the two must be roughly contemporary (**Fig. 13**).[28] From the same Anatolian site comes a pointed and ribbed obsidian vessel[29] reminiscent of vessels from Late Minoan Crete.[30] Again there is a disquieting chronological gap.

An ivory pyxis from Minet el Beida near Ugarit shows a seated, Aegean-looking '*potnia theron*' holding up leaves for two goats to nibble.[31] This piece has been much discussed and, in the view of Sarah Morris,[32] 'the jury is still out' as to whether this is the work of an Aegean or Near Eastern craftsman as 'this image has no close parallel in Levantine art, and yet has been rejected as Aegean'. An ivory lid found in a context of the 12th century BC at Ekron in Israel shows animals with distinctive flame-like markings on their haunches.[33] Similar markings appear in Syria in the 9th century BC on the products of what Georgina Herrmann[34] has called the 'Flame and Frond School' of ivory carving situated in Tell Halaf, and which Irene Winter[35] has placed further west in Carchemish (**Fig. 14**). These markings also appear on ivories from the Idaean Cave on Crete.

The same Aegean-East Mediterranean interchange can be found on a much larger scale in the field of architecture. The megaron appears at Troy I and at Beycesultan in western Turkey *c*. 3000 BC .[36] It continues to be found at both sites during the 3rd millennium BC and also appears at Kültepe in central Turkey towards the end of the millennium. Megara are a feature of Mycenaean architecture in the second half of the 2nd millennium BC. The appearance of Myceneaean-type pebble hearths at Ekron and Tel Qasile in Israel in the early 11th century BC can be attributed to the Philistines who had recently migrated from the Aegean world.[37] Megara at Gordion in the 8th century BC

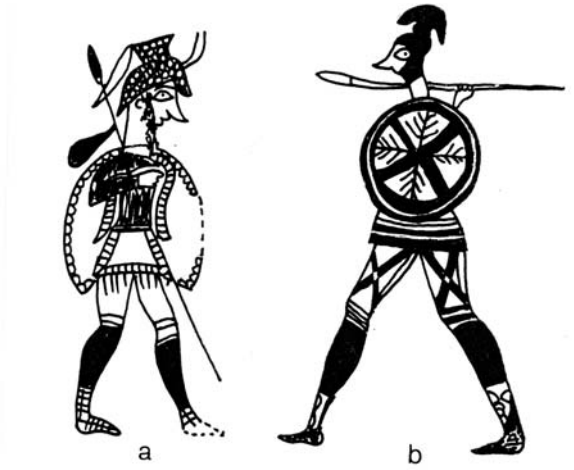


Figure 15a Warrior from the Warrior Vase from Mycenae (after S. Hood, *The Home of the Heroes - The Aegean before the Greeks* [London, 1967], 115, fig. 111); **15b** Warrior from a tile from Pazarlı (after E. Akurgal, *Phrygische Kunst* [Ankara Üniversitesi Dil ve Tarih-Cografya Fakultesi Yayımları 95, Arkeoloji Enstitüsü 5; Ankara, 1955], pl. 45a and *cf.* pls 45b-50)

presumably also came from the west with the Phrygians.

The cyclopean masonry, postern passageways and gateways with ellipsoid arches of the 13th century BC Mycenaean citadel at Tiryns and the contemporary Hittite capital at Bo–azköy cannot have evolved without contact. Even details such as the holes drilled into the foundation blocks at both sites, presumably to anchor the armature for the upper walls, are of similar diameter and precision.[38] Were there travelling teams of stonemasons like those who built the cathedrals of Medieval Europe? The spread of ashlar masonry may be attributed to a parallel phenomenon.[39]

Finally, it eludes me how it is that the chinless, large-nosed warriors in very short kilts, leggings and crested helmets on the Warrior Vase from Mycenae (second quarter of the 12th century BC) can be quite so similar to the warriors on the terracotta plaques from Pazarlı in central Turkey (6th century BC) (**Fig. 15**). This also is one of the chronological anomalies that make research into the world of exchange and transfer of motifs in the East Mediterranean world so frustrating, challenging and enjoyable.

Abbreviation

Collon 1987 = D. Collon, *First Impressions. Cylinder Seals in the Ancient Near East* (London and Chicago, 1987).

Notes

Drawings are by the author unless otherwise specified.

1 C. Pulak, 'The Uluburun Shipwreck', in: S. Swiny, R.L. Hohlfelder and H. Wylde Swiny (eds), *Res Maritimae - Cyprus and the Eastern Mediterranean from Prehistory to Late Antiquity: Proceedings of the Second International Symposium 'Cities on the Sea', Nicosia, Cyprus, October 18–22, 1994* (American Schools of Oriental Research, Cyprus American Archaeological Research Institute Monograph Series 1; Atlanta, 1997), 233–62, esp. 257, since revised following the discovery of a further tree-ring: Malcolm Wiener, pers. comm., 1998; see also M. Wiener, 'The Absolute Chronology of Late Helladic IIIA2', in: *Sardinian and Aegean Chronology. Towards the Resolution of Relative and Absolute Dating in the Mediterranean* (Oxford, 1998), 309–19.
2 Pulak (n. 1).
3 H. Baker, D. Collon, J.D. Hawkins, T. Pollard, J.N. Postgate, D. Symington and D. Thomas, 'Kilise Tepe 1994', *Anat. Stud.* 45 (1995), 139–91, esp. 176–7, fig. 15.6 and more recent examples.
4 Collon 1987, no. 571.
5 See Collon 1987, 63 and no. 262.
6 Collon 1987, no. 570.
7 See Pulak (n. 1) for a full discussion.
8 Collon 1987, no. 551.
9 E. Porada, 'The Cylinder Seals Found at Thebes in Boeotia', *Archiv für Orientforschung* 28 (1981), 1–78, and E. Porada, 'Remarks on the Tod Treasure in Egypt', in: M.A. Dandamayev *et al.* (eds), *Societies and Languages of the Ancient Near East – Studies in Honour of I.M. Diakonoff* (Warminster, 1982), 285–303, respectively.
10 Collon 1987, no. 130.
11 D. Collon, *Catalogue of the Western Asiatic Seals in the British Museum, Cylinder Seals* III. *Isin/Larsa and Old Babylonian Periods* (London, 1986), no. 174.
12 M.-C. Heath, 'Early Helladic Clay Sealings from the House of the Tiles at Lerna', *Hesperia* 27/2 (1958), 81–120; ead., 'Further seals and sealings from Lerna', *Hesperia* 38 (1969), 500–21; J. Aruz, 'Seal Imagery and Sealing Practices in the Early Aegean World', in: P. Ferioli, E. Fiandra, G.G. Fissore and M. Frangipane (eds), *Archives before Writing – Proceedings of the International Colloquium Oriolo Romano, October 23–25, 1991* (Publicazioni del Centro Internazionale di Ricerche Archeologiche, Anthropologiche e Storiche I; Rome, 1994), 211–46.
13 S. Alp, *Zylinder und Stempelsiegel aus Karahöyük bei Konya* (Türk Tarih Kurumu Yayınlarından V. Seri - SA. 26; Ankara, 1968).
14 Cf. Heath 1958 (n. 12), 128, fig. 1 and Alp (n. 13), 13, fig. 2.
15 R. Higgins, *Minoan and Mycenaean Art* (London, 1967), 28, fig. 13.
16 D. Levi, *Festòs e la civiltà minoica* (Rome, 1976), pls 224, 229; J. Weingarten, 'Two Sealing Studies in the Middle Bronze Age, I: Karahöyük; II: Phaistos', in: Ferioli *et al.* (n. 12), 261–305; Alp (n. 13).
17 H.G. Buchholz and V. Karageorghis, *Prehistoric Greece and Cyprus* (London, 1971), colour plate 1 no. 890 and p. 69, fig. 27 respectively.
18 Heath 1958 (n. 12), S49, inverted.
19 R.M. Boehmer and H.G. Güterbock, *Glyptik aus dem Stadtgebiet von Boğazköy* (Boğazköy-Hattuša 14.2) (Berlin, 1987), fig. 27.
20 Collon 1987, nos 647, 651, 705–8 for Middle Bronze Age examples and nos 303, 315 for Late Bronze Age examples; see also D. Collon, 'Bull-leaping in Syria', *Ägypten und Levante* 4 (1994), 81–5, for bull-leaping.
21 C. Doumas, *The Wall-Paintings of Thera* (Athens, 1992), 158–9, fig. 122.
22 Collon 1987, nos 333–4.
23 R.B.K. Amiran, 'A Seal from Brak: Expression of Consecutive Movements in Late Minoan Glyptic', *Iraq* 18 (1956), 57–9.
24 D. Collon, 'The Scroll Cross', in: B. Hrouda *et al.* (eds), *Von Uruk nach Tuttul, eine Festschrift für Eva Strommenger – Studien und Aufsätze von Kollegen und Freunden* (Munich and Vienna, 1992), 45–50.
25 J.-L. Huot, V. Pardo and A. Rougeulle, 'A propos de la perle L.76.5 de Larsa: Les perles à quatre spirales', *Iraq* 42 (1980), 120–9; J. Curtis, *Nush-i Jan* III. *The Small Finds* (London, 1984), 3–6.
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28 C. Decamps de Mertzenfeld, *Inventaire commenté des ivoires phéniciens et apparentés découverts dans le Proche-Orient* (Paris, 1954), pls CXXV–CXXVI, nos 1087–89.
29 A. Özten, 'Acemhöyük taş kapları', *Belleten* LII, no. 203 (1988), 394–406, fig. 14.
30 Higgins (n. 15), 161, fig. 200 and cf. p. 158, fig. 194 for a vessel worked in obsidian.
31 Decamps de Mertzenfeld (n. 28), pl. LXVIII.767.
32 S. Morris, 'Daidalos and Kothar: The Future of their Relationship', in: E.H. Cline and D. Harris-Cline (eds), *The Aegean and the Orient in the Second Millennium, Proceedings of the 50th Anniversary Symposium, University of Cincinnati, 18–20 April 1997* (Aegaeum 18; Liège and Austin, 1998), 281–8, esp. 282.
33 T. Dothan, and S. Gitin, 'Tell Miqne-Ekron – The Rise and Fall of a Philistine City', *Qadmoniot* 27.1–2 (105–106) (1994), 2–28 (in Hebrew), esp. 13.
34 G. Herrmann, 'The Nimrud Ivories, 1: The Flame and Frond School', *Iraq* 51 (1989), 85–109.
35 I. Winter, 'North Syrian Ivories and Tell Halaf Reliefs: The Impact of Luxury Goods Upon "Major" Arts', in: A. Leonard and B.B. Williams (eds), *Essays in Ancient Civilization Presented to Helene J. Kantor* (Studies in Ancient Oriental Civilization 47; Chicago, 1989), 321–32.
36 S. Lloyd, 'Bronze Age Architecture of Anatolia', *Proceedings of the British Academy* 49 (1963), 153–76.
37 T. Dothan, 'Ekron of the Philistines, Part I: Where they came from, how they settled down and the place they worshipped in', *Biblical Archaeology Review* 16.1 (1990), 26–36, esp. 35.
38 Cf. H. Schliemann, *Tiryns* (London, 1886), 211, 265–9, and O. Puchstein *et al.*, *Boghasköy – Die Bauwerke* (WVDOG 19; Leipzig, 1912), 113–6 and figs. on pp. 115 and 127.
39 N.K. Sandars, *The Sea Peoples* (London, 1978), 146–7, 151–2.

The Changing Relationship of the Euboeans and the East[1]

Irene S. Lemos

A major change in understanding early contacts between Greeks and the East took place when the rich cemeteries at Lefkandi in Euboea were discovered, which altered our knowledge of the so-called 'Dark Age', and which demonstrated that contacts between the Aegean and the East were established earlier that had been thought before.[2] A number of scholars, however, could not accept that the Euboeans might have actively been involved in such early exchanges; other scholars allowed the Euboeans to have travelled as far as the Dodecanese and perhaps Cyprus, where they could have met Phoenicians and others.[3]

It is noticeable, however, that scholars who argue against any Greek involvement in the East often examine the whole period from the 10th to the 8th centuries BC together. There are, of course, notable exceptions, but those who treat the evidence together miss what I believe is an important aspect in the changing relationship between the Aegean and the East, namely that the nature of the relationship depended on the political and social circumstances in both places and that these kept changing throughout this crucial period of early contacts.[4]

In the East, the beginning of this period is marked with important changes in the composition and social organisation of the ethnic groups which eventually replaced the Late Bronze Age peoples, while later the consequences of the Assyrian presence in the area are equally important. In the Aegean, the important factors were the crucial social changes which marked this period and which were eventually to transform some of the Aegean communities into city-states.

In my view, these relatively frequent changes in the political and social 'history' of both the East and the Aegean prevent us from putting their relationship in a theoretical scheme or model. It is one of the reasons that the study of the 1st millennium BC differs from that of the 2nd. Models, which can perhaps be applied to the Late Bronze Age and whose validity might be substantiated or rejected by the abundance of written and archaeological evidence, cannot be used where evidence is thin and circumstances constantly changing.[5]

Recent archaeological research on the period after the collapse of the palatial system in Greece leaves no doubt that exchange between the Aegean and the East was not lost. If there was any gap in communication within and outside of the Aegean this could have only been of short duration and perhaps may not have affected the whole of the Greek world. In this paper, however, I examine the changing relationship between the Euboeans and the East from around 950 to 825 BC based on the Greek pottery found in the eastern Mediterranean.[6] This coincides with the peak period of the cemeteries at Lefkandi, and especially of the Toumba cemetery which produced most of the imported goods. I have divided the material into three stages according to the relative chronology provided by the pottery styles in the Aegean.

The first stage is that which coincides with the Middle and Late stages of the Protogeometric period, which in the traditional dating corresponds roughly to the second half of the 10th century BC. This is the period of the earliest Greek pottery found in the East and the most important evidence comes from Tyre. Early Greek sherds have now been added to the previously published examples from the stratified deposits.[7] Some of them find their best parallels in the fragmentary Middle Protogeometric pottery from the filling of the Toumba building dated to around 950 BC.[8] However, it is not only the early date of this material which is important, but also its character, since the Protogeometric vases found in Tyre include not only open drinking vases, mostly skyphoi, but also storage vessels, such as amphorae. One such vase comes from the stratified material excavated by Bikai: two fragments of an amphora found in Level 11.[9] Nitsche dated the level to the second half of the 10th century BC and the vessel finds its best parallels in Middle Protogeometric examples from Toumba which also belong to the same date.[10]

The most interesting skyphos among the open vases from both the stratified and the unstratified fragments is one which comes from the same Level 11 as the fragmentary amphora mentioned above. It is interesting because it is earlier than the complete skyphos that has been found in Amathus and which is discussed below. The fragment from Tyre is often used for comparison with similar vases, as is also the case with another example from Xeropolis used by Nitsche.[11] But the skyphos found in Tyre appears to be earlier because the filling of the circles is solid and not reserved, unlike on the others. Reserved fillings are a feature which appear in Euboean Protogeometric pottery not earlier than the transitional phase from Late Protogeometric to the local Sub-Protogeometric I. So the Tyre example must be earlier than the one from Cyprus.[12]

A standard pendent semicircle skyphos from Level 11 has been categorised by Kearsley as her type 6, which she dates to the Late Geometric period.[13] I agree, however, with Nitsche that this fragment could be Protogeometric, since the rest of the Greek material in Level 11 belongs to that period.[14] It has also been well established that there was an experimental version of this type of skyphos in Middle Protogeometric, while the standard form with a ring base started in Late Protogeometric.[15] It is possible, therefore, that this skyphos is the earliest example to have reached the East.[16]

More amphorae fragments, however, have been found in another site. Courbin published five fragments from Bassit found in a later contaminated context.[17] The fragments belong to large amphorae suitable for storing. Courbin, in his careful analysis, compared them with Euboean examples dated to the Protogeometric and especially to the Middle Protogeometric period.

There is another amphora found in north Syria which, although it has never been published, has been mentioned in Saltz's thesis. It was found in Çatal Hüyük in the southern part of

the Amuq plain and is described as having a zone decoration on the shoulder.[18] The first zone is decorated with cross-hatched lozenges, which have their ends joined. Then there is another zone with triangles and finally the last one has sets of semicircles. The belly was decorated with wavy lines. In her thesis Saltz compared the vase with Protogeometric amphorae from the Kerameikos in Athens.[19] But we can now offer a better example from Middle Protogeometric Lefkandi.[20] Saltz said that the fragment comes from a level dated to the 10th century BC. This is surprising because the other three Protogeometric vases discussed below have been found either in levels which, according to the local chronology, are dated much earlier, or they have a dubious context.

The most impressive of these is a large open vase with typical Protogeometric decoration from Stratum IV at Tel Hadar, which according to the excavator is dated to the 11th century BC.[21] The vase is of unusual shape: a large bowl with a ring base. Coldstream described it as a lebes, a ceramic adaptation of a handle-less bronze cauldron. He also studied its fabric and thought it very similar to that of Euboean vases.[22] Although the shape is indeed unique, the decoration resembles a vase from Lefkandi in that both have the same filling in their sets of concentric circles. The vase from Lefkandi, however, has been restored with a conical foot.[23]

Two more Protogeometric vases were found at Tel Dor.[24] One belongs to a zigzag cup which had a reserved band below the zigzag decoration. This is a version of a type that is typical of Middle Protogeometric pottery found in the fill of the Toumba building.[25] The other is from a closed vase, most likely another amphora decorated with full circles. According to Gilboa the vases were found in the local 'Iron Age I/II transition stage', which corresponds roughly to the first half of the 10th century BC and thus is a bit earlier than the traditional dating of the Middle Protogeometric period in the Aegean around 950 BC.[26]

The problem of absolute dates remains a thorny issue and it is so complex that it is better for the moment to comment that in terms of their relative chronology, these vases are Protogeometric in style and that most, if not all of them, are probably from Euboea.[27]

Finally, there are the two vases from a looted tomb at Amathus which stylistically can be placed at the very end of the Protogeometric period.[28] One is a typical Late Protogeometric zigzag cup and the other is a circle skyphos. Both have a high foot and for this reason are considered Protogeometric but from the very end of this stage. This is because the skyphos has reserved cross-filling decoration in the circles. This only appears late in the period. The vases have been scientifically examined and it is possible that they were made of Euboean clay.[29] They remain, as far as I know, the earliest Aegean imports to reach Cyprus during the Early Iron Age.

It is clear from the above discussion that both closed and open Protogeometric vases have been found in the East. Courbin was the first to point out that it is during this early stage of exchange that Greek amphorae were found in the East.[30] He has also argued that these amphorae were imported, not for their appearance, but for their contents, which was probably olive oil rather than wine since good quality wine was locally produced. In addition, these early amphorae come from settlements rather than from tombs and this suggest that they found their way to the East as containers of goods and not for their symbolic value which might have eventually turned them into grave offerings. The exception is Cyprus, where the earliest Greek imports were given as grave offerings, a practice which continues throughout the Cypriot-Geometric period.[31] It is also interesting that at present the earliest pieces do not appear to have been found in Cyprus, but in Tyre. This might be only accidental, but if it is not, then it could be important in the reconstruction of the earlier trade routes during this first stage of contacts, since it might suggest that the Euboean vases arrived first in Tyre rather than in Cyprus (**Fig. 1**).

It is becoming clear from the above discussion that Aegean pots and perhaps imported goods contained in amphorae arrived in the East in the 10th century BC. The lack of earlier material during the 11th century BC does not imply that there was a gap in contact, but rather that the exchange was moderate and thus there are fewer chances for archaeologists to verify it.[32]

On the other hand, the 11th century BC was indeed a complex and unstable period not only for the Aegean, but for the whole of the eastern Mediterranean. This might explain the scantiness of evidence of communication between the various regions. Significant changes resulting from the events of the previous century affected the whole region and transformed the eastern Mediterranean communities from the Late Bronze Age status quo into a new community with different socio-economic structures which eventually shaped the polities of the Early Iron Age.[33]

But the 10th century BC is marked by more stability and so it is no surprise that some of the earliest Aegean imports reached the East during this period. They arrived first at Tyre. According to later sources this was one of the most prosperous periods for the town. It was in the 10th century BC, under the charismatic Hiram I, that Tyre became an important trade centre. She first established her hegemony over the other Phoenician cities, Byblos and Sidon, and then achieved the famous treaty with King Solomon of Israel.[34] Hiram and Solomon joined in reopening the inland routes and establishing trade in the Red Sea. This brought their ships to Arabia and perhaps the Indian Ocean.[35] So if we follow the information provided by the Bible, we may wonder whether the Phoenicians were interested at all in going west beyond, perhaps, the waters of Cyprus and, perhaps, southern Crete.[36] But even if they were, I doubt whether the Tyrians were attracted to the central Aegean. It is possible that they thought, as do some modern scholars, that the Aegean was still in deep 'darkness', so that such a trip was not to their advantage.

Despite ancient and modern prejudices, the 10th century BC was also a good period for the Aegean, although here we must depend on the archaeological evidence and not on later literary sources. The archaeological data reveals that the 10th century BC was also important for the Aegean communities, and especially for those that formed a *koine* with Euboea. This mostly included communities in central Greece, the coast of Thessaly, some of the Aegean islands, and perhaps the Chalcidice, and it was expressed through the use of a similar style of pottery, similar dress ornaments, and the spread of common ideas.[37] I believe that these ties, reflected in the archaeological record, were based on close links of communication exchange patterns which these communities promoted.[38]

At Lefkandi imports from the *koine* members are found in the tombs together with eastern goods.[39] From Thessaly and northern Greece, for example, come handmade wares which also had a great impact on the local production.[40] In addition to

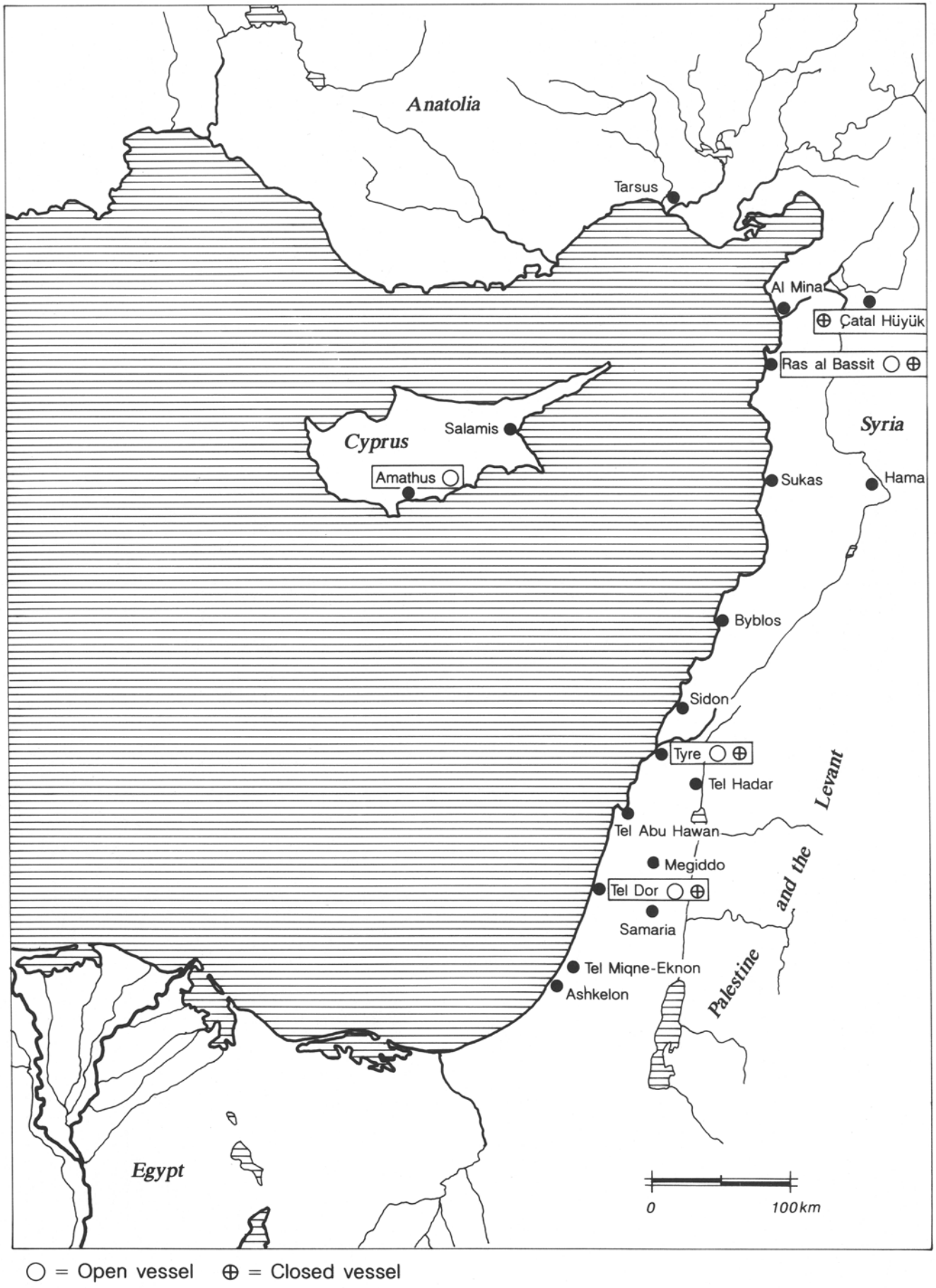

Figure 1 Distribution of Greek vases found in the East during the first stage of contact (*c.* 10th century BC)

ceramics, it is possible that some of the gold which was required for the jewellery produced at Lefkandi since the middle of the 10th century BC came from northern Greece and especially from the Chalcidice.[41] Finally, it is very possible that the amber found in the tombs at Lefkandi was acquired through contacts with these regions.[42] In exchange, Euboeans might have supplied members of their *koine* with imported goods.[43]

So the Euboeans were busy within the Aegean and also at home: constructing the earliest monumental building we have so far in the Aegean after the end of the palatial period.[44] I believe that the building at Toumba above the burials and its destruction is associated with an important political change that took place at Lefkandi at around 950 BC, when the whole community decided to undertake the task of filling in and covering the building. Soon after, members of the ruling class decided to respect the space around the mound. This area was never used, not even for the veneration of ancestors. But the local ruling class was buried close to the building establishing continuity with the burials underneath it. Their cemetery is perhaps one of the most remarkable discoveries in the Aegean. Most of the 80 tombs and 34 pyres so far excavated in the Toumba cemetery contained, in addition to local and imported pottery from Athens and the North, gold jewellery and imports from a variety of regions in the East including Egypt.[45] What is striking here is not only the number of imported goods and the jewellery found in single tombs but also that almost everybody in this cemetery had a good share of them.

It is certain, however, that by the second half of the 10th century BC an elite group, which was buried at the Toumba cemetery, was well established and was eager to acquire imported goods to reinforce its status. At the same time, I believe that this was only part of the story. The new ruling class must also have required other commodities from the East and the North – such as raw materials like gold, copper and tin.

So there were plenty of reasons for the Euboeans to travel further south than the Dodecanese and Caria – regions that we know they had reached perhaps as early as the late 11th or the early 10th century BC.[46] These first Euboeans who went to the East might have taken with them goods to offer to the sophisticated Tyrians and North Syrians: slaves, iron, but perhaps also gold and some of their own products from the fertile Lelantine plain, like olive oil, which might have been carried in the amphorae found during this first stage of contact with the East.

In the following period from around 900 to 850 BC, the relationship between the Aegean and the East changed again. The Phoenicians might have realised that the Aegean may have something to offer either in the form of goods for exchange or in the form of an eager client for exotica. After the end of the Late Protogeometric period and during this second stage, Phoenicians probably started to visit the Aegean. I believe that during this second stage that there was a lot of co-operation in trafficking goods between the Euboeans and the Phoenicians.

During this stage the number of Greek vases found in the East appears to decrease. A number of pendent semicircle skyphoi, however, might belong to the transition stage from the Late Protogeometric to the Sub-Protogeometric period (**Fig. 2**). The skyphos found at Kition belongs to this stage.[47] Another example might be the skyphos from Tel Abu Hawan which Kearsley prefers to date much later.[48] The rim, however, and the deep body are early features and not later than Sub-Protogeometric I-II.[49] From Tyre we also have some pendent semicircle skyphoi and plates from Level 10.1 which are dated by Nitsche to Sub-Protogeometric I.[50]

Coldstream was the first to observe the relative absence of Greek exports to the East after 900 and until 850 BC. During the same period, however, there is no gap in eastern goods arriving in Lefkandi. For Coldstream, the lack of Greek vases in the East and the abundance of imported trinkets at Lefkandi indicate a change of carriers: the goods were brought to the Aegean on Phoenician boats. He also noted that this is the period when the Assyrian army marched into the Levant, pressing the Phoenicians to explore alternative markets for their trade.[51] The foundation of Kition has also been seen as the outcome of Assyrian pressure on the Levantine coast in the second half of that century, which resulted in the loss of the Syrian market and pressed Tyre to reorganise her commercial strategy and look for new customers.[52] The Euboean ruling class could provide a good start. At the same time, the appearance of imported goods at other sites like Athens indicates that the taste for exotica had been passed on to other Greeks.

It is perhaps not a coincidence that the earliest faience beads in Athens were found in a tomb dated to this period.[53] But it is in the middle of the 9th century BC that a female burial near the Areopagus, better known as the burial of the Rich Athenian Lady, was given gold and ivory jewellery, faience and glass beads, which can be compared with the burials of the even richer ladies from contemporary Lefkandi.[54] Her earrings have been described as the work of a Near Eastern craftsman who adapted his skills to suit local taste. So in Athens, as in Crete, we perhaps have Near Easterners who became residents and used their skills for the local elite groups. In Athens in particular, as Coldstream reminded us, the local aristocracy might already have benefited from the exploitation of the silver mines at Thorikos, since silver was a commodity highly appreciated by eastern visitors especially in a period when some of their tribute to the Assyrians was paid in silver.[55]

The third stage from 850 to around 750 BC has been described as a busy period of exchange and traffic for both the Euboeans and the Levantines. Both Boardman and Coldstream discussed the evidence from this stage and there is no need to repeat it in great detail.[56] They both showed that Greek vases imported in the East increased considerably during this stage. It has also been argued that one of the main reasons behind this must be that the Assyrians were again busy with problems away from the Levantine coast, caused by the rise of Urartu, and so they were not causing problems for the people operating along the coast. If so, it appears that the people who benefited the most from this were the North Syrians, because of a concentration of Greek imports in the area indicating that they advanced their contacts with the Aegean. This might suggest that these North Syrians, mostly Aramaeans, not being sailors themselves, might have welcomed traders from the Aegean who could provide some competition for the Phoenician trade.[57]

The vase most often found abroad in this period is the pendent semicircle skyphos. Though most of these were made in Euboea, clay analysis has shown that some were produced in the Cyclades, and others might have come perhaps from Oropos, where recent finds have brought to light a large number of both pendent semicircle and circle skyphoi in a Sub-Protogeometric context.[58] Together with the skyphoi, some pendent semicircle

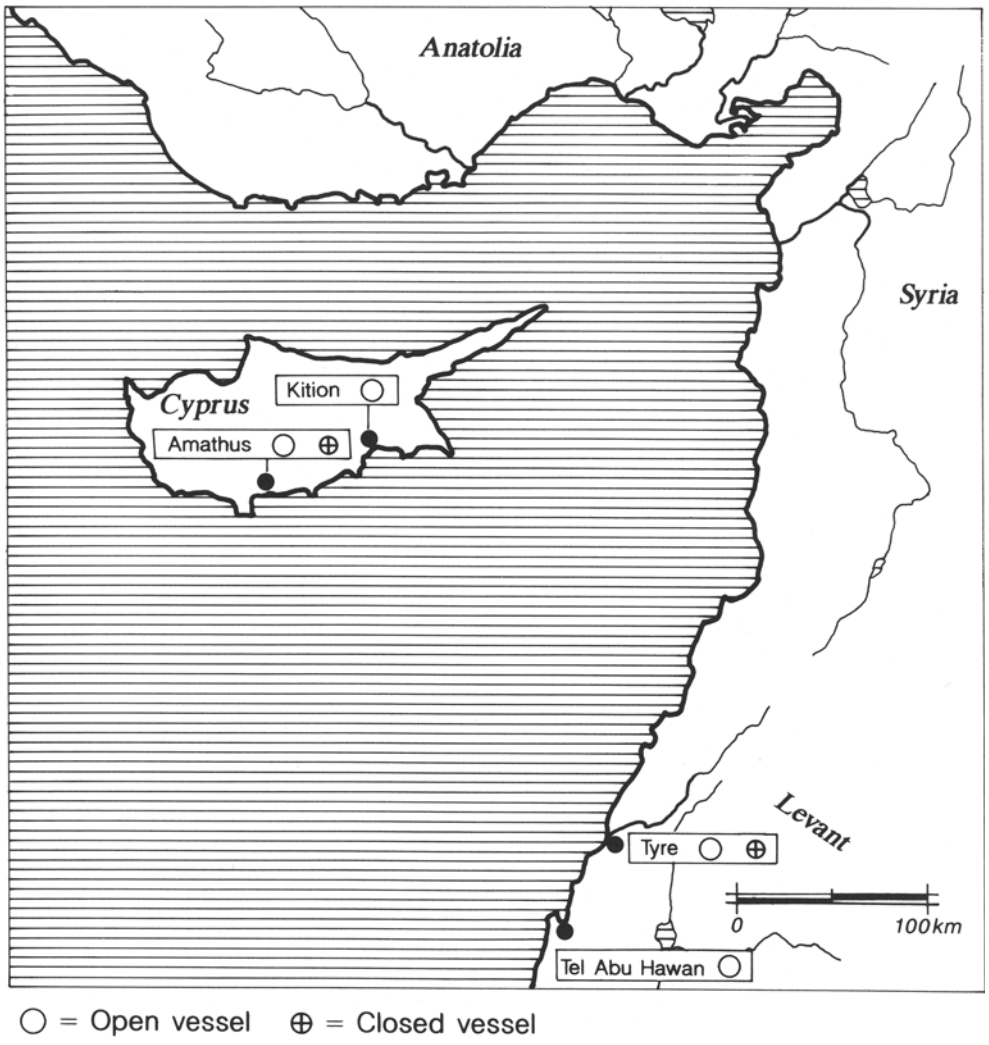

Figure 2 Distribution of Greek vases found in the East during the second stage of contacts (early 9th century BC)

plates have also been found. This class of vases has been used together with the skyphoi for dating the problematic or mixed deposits in the Eastern Mediterranean. The typology of both these vases, as we all know, is tedious and problematic, and only the early and late versions can be dated according to their stylistic development in the absence of any additional secure context. Recently, skyphoi and plates found in the Toumba cemetery together with other vases, which can be dated with more confidence, have shown that different types not only can exist simultaneously, but that they might also be earlier than we thought. For example, it is now clear that pendent semicircle plates were already produced at the end of the Late Protogeometric phase and not in Sub-Protogeometric II–III.[59] Moreover, it also appears that both types with single or double handles were made at the same time. For example, in one tomb, which has been dated to the Late Protogeometric/Sub-Protogeometric I phase because of an Attic import, both versions were found together.[60] So there is need for further scrutiny of all the available evidence in our attempt to pin down the development of these two types of vases.

There is, of course, more contact in the Late Geometric period when Euboeans continued to play an important role. The rich cemeteries at Lefkandi ceased to be used for burials around 825 BC, but other Euboeans, from Eretria, Chalcis and perhaps Kyme, continued their trade activities. We know this because during this stage there is increasing evidence of Greek imports in the East. These were again mostly Euboean wares, with some Attic, which were probably carried by Euboeans, as Coldstream has suggested.[61] This is also the peak period of the site of Al Mina, which might have served as a trading post.

Trading posts like Al Mina were probably populated by a mixture of traders from the Aegean, Cyprus and the Levantine coast. There is an interesting question as to who had the upper hand at Al Mina. But this is not easy to answer, even though the recent scrutiny of the evidence by both Kearsley and Boardman suggests that the Euboeans might have played the most important part in the early history of the site, and if pots do identify the people who used them, then it is possible that in the particular area that Woolley excavated, the Euboeans were in charge for a few generations. But perhaps what is most important is that Al Mina provided one of the occasions where Greeks could mix with their eastern neighbours for longer periods of time. The result of such close contacts can be seen in the adoption of the alphabet, the exchange of mythological stories, and the planning of joint expeditions to new and perhaps more promising lands to the west.[62] These places were far away from the constraints and the problems imposed on the people who lived on the Levantine coast by the Egyptians, the Assyrians and later the Babylonians or the Persians. Thus, the relationship between the Aegean and the East was bound to change again. This time, the great benefactors were the people of the Aegean, who adopted and adapted for their own ends the outcome of such close and perhaps personal exchanges.

It can be argued, however, that earlier Euboeans did arrive, perhaps first, in the East during the first stage of contacts in the

10th century BC. I believe that they had good reasons to go so far. In many ways, I can see them as being more flexible than the Phoenicians, the Syrians, the Israelites and the other peoples who lived on the Levantine coast. These peoples, who had been under the control first of the Egyptians and later of the Assyrians, were forced to devise policies to keep their masters and neighbours happy in the form of tributes and intricate gifts in various forms. But during this first stage in the 10th century BC, for the people from the Aegean, life was perhaps less complicated. What was important for them was profit and meeting the demands of emerging elite groups. In order to achieve this they were prepared to travel to the East and to advertise their recent recovery from their own Dark Age. Later they were ready to settle in *emporia* or *enoikismoi* together with other peoples, and finally, when it was possible, in *apokoiai*. But the foundation of *apokoiai* was what they did in the West rather than in the East.

Addendum

Since the second submission of my paper for publication, more Euboean pottery has been discovered in the East. A number of sherds were found at Tel Rehov, an inland site in the Beth Shean Valley, which is located on the route from Cisjordan to Transjordan. They have been published by Coldstream in N. Coldstream and A. Mazar, 'Greek Pottery from Tel Rehov and Iron Age Chronology', *Israel Exploration Journal*, 53, 2003, 29–48. Two of the fragments come from Protogeometric/Sub-Protogeometric Euboean kraters; another two sherds belong to pendent semicircle skyphoi dated also to Late Protogeometric and Sub-Protogeometric periods. Interestingly, fragments of a Sub-Protogeometric pyxis were also discovered; the pyxis has close parallels with similar pots found at Lefkandi. Such vases there, apart from a few exceptions, were given as funerary gifts. This is the first example so far known of an Euboean pyxis found in the East and it is intriguing to connect it with similar ones – most probably of the same workshop – found in tombs in the Toumba cemetery. In particular similar vases from a disturbed tomb include the pyxis with the earliest representations of a ship found on Early Iron Age pottery (see *Lefkandi III*, pls 92–94). Finally, from the same site come two fragments of Attic skyphoi dated to Early Geometric/Middle Geometric periods.

These new finds have restarted the debate about absolute chronology in both the Aegean and the East (for the Low chronology see N. Coldstream, 'Some Aegean reactions to the chronological debate in the southern Levant', *Tel Aviv* 30 [2003], 247–58; for the High chronology see I. Finkelstein, 'Tel Rehov and Iron Age Chronology', *Levant* 36 [2004], 181–8).

Finally, Al Mina has been the focus of a comprehensive study by J. Luke, *Ports of Trade, Al Mina and Geometric Greek Pottery in the Levant* (BAR International Series 1100; Oxford, 2003).

Abbreviations

Lefkandi I = M.R. Popham and L.H. Sackett with P.G. Themelis, *Lefkandi I, The Iron Age* (BSA Supp. 2; London, 1979–1980).

Lefkandi II.1 = R.W.V. Catling and I. S. Lemos, *Lefkandi II, The Protogeometric Building at Toumba. Part 1, The Pottery* (BSA Supp. 22; London, 1990).

Lefkandi III = M.R.Popham with I.S. Lemos, *The Early Iron Age Cemetery at Toumba* (BSA Supp. 29; London, 1996).

Mediterranean Peoples in Transition = S. Gitin, A. Mazar and E. Stern (eds), *Mediterranean Peoples in Transition, Thirteenth to Early Tenth Centuries BCE, In Honor of Professor Trude Dothan* (Jerusalem, 1998).

Italy and Cyprus = L. Bonfante and V. Karageorghis (eds), *Italy and Cyprus in Antiquity: 1500-400 BC. Proceedings of an International Symposium held at the Italian Academy for Advanced Studies in America at Columbia University, November 16-18, 2000* (Nicosia, 2001).

Notes

1 This paper was presented first at the British Museum Conference in 1997; since then, first an article by J.N. Coldstream, 'Exchanges between Phoenicians and Early Greeks' – which covers the same period – was published in *National Museum News (Beirut)* 11 (2000), 15–32, and secondly parts of my argument have already been published in I.S. Lemos, 'The Lefkandi connection: Networking in the Aegean and the Eastern Mediterranean', in: L. Bonfante and V. Karageorghis (eds), *Italy and Cyprus in Antiquity: 1500-400 BC. Proceedings of an International Symposium held at the Italian Academy for Advanced Studies in America at Columbia University, November 16–18, 2000* (Nicosia, 2001), 215–26.

2 *Lefkandi I*; *Lefkandi II.1*; *Lefkandi III*; M.R. Popham, 'Precolonization: early Greek contact with the East', in: G.R. Tsetskhladze and F. De Angelis (eds), *The Archaeology of Greek Colonisation, Essays dedicated to Sir John Boardman* (Oxford, 1994), 11–34.

3 Mostly argued by A. Sherratt and S. Sherratt in 'The growth of the Mediterranean economy in the early first millennium BC', *World Archaeology* 24 (1993), 361–78 and by J.K. Papadopoulos in 'Phantom Euboians', *Journal of Mediterranean Archaeology* 10 (1997), 191–219. Negbi is less certain, allowing the Euboeans some activity in the Aegean in O. Negbi, 'Early Phoenician presence in the Mediterranean islands: a reappraisal', *AJA* 96 (1992), 599–615. See also J.C. Waldbaum, 'Early Greek Contacts with the Southern Levant, ca. 1000–600 B.C.: The Eastern Perspective', *BASOR* 293 (1994), 53–66.

4 The exceptions are Coldstream and Boardman: J.N. Coldstream, 'Early Greek Visitors to Cyprus and the Eastern Mediterranean', in: *Cyprus and the East Mediterranean in the Iron Age: Papers from the 12th British Museum Classical Colloquium* (London, 1989), 90–6; J. Boardman, 'Al Mina and History', *OJA* 9 (1990), 169–90. See also more recently Coldstream (n. 1).

5 Most of the discussion of early Greek trade concentrates on the debate over whether the economy was 'modernist' or 'primitivist' and takes into consideration the period after 750 BC. See, for example, D.W. Tandy, *Warriors into Traders: the Power of the Market in Early Greece* (Berkeley, 1997).

6 This consists of mostly Euboean pots and a few others from other Aegean region (Athens and the Cyclades). They are unfortunately the only evidence for imported goods in the eastern Mediterranean. See also Coldstream (n. 1), 16–17, where he argues that although pottery might be only a 'trace element' for the detection of contacts, it can provide a good chronological background for understanding the exchange, since Greek ceramic wares changed rapidly in style and can be dated in relative well established sequences.

7 J.N Coldstream, 'Early Greek Pottery in Tyre and Cyprus: Some Preliminary Comparisons', *RDAC* 1988, 35–44, esp. 38–40.

8 For example the circle-skyphoi from Tyre find close parallels in the skyphoi from the fill of the building at Toumba. Compare the examples in *Lefkandi II.1*, 21–2, pl. 11 with those from Tyre, Coldstream (n. 7), pl. X. 25–6.

9 P.M. Bikai, *The Pottery of Tyre* (Warminster, 1978), pl. 30.1. Other fragments of amphorae come from the unstratified material, Coldstream (n. 7), 40. Coldstream (n. 1), 18, has rightly reminded us that Greek material found in Tyre was extremely small in numbers when compared with the local ceramics.

10 A. Nitsche, 'Bemerkungen zu Chronologie und Herkunft der Protogeometrischen und Geometrischen Importkeramik von Tyros', *Hamburger Beiträge zur Archäologie* 13/14 (1986/87), 7–49, esp. 12–13. Compare with the fragment in *Lefkandi II.1*, pl. 36.634.

11 Ibid., 14–5, fig. 2 and Bikai (n. 9), pl. 30.3.

12 *Lefkandi I*, 28–9, 300–1, pls 14, 34.

13 Bikai (n. 9), 66, R. Kearsley, *The Pendent-Semicircle Skyphos* (BICS Supp. 44; London, 1989), 67, 101–4. For a critical discussion on Kearsley's date of Type 6 skyphoi, see M. Popham and I. Lemos, *Gnomon* 64 (1992), 152–3.

14 Nitsche (n.10), 16–7.

15 *Lefkandi II.1*, 22–3.

16 This fragment, however, is so small that it is not easy to date it by its shape. The only solution is to assign it to the same date as the other finds from Level 11 in Tyre.

17 P. Courbin, 'Fragments d'amphores Protogéométriques grecques á Bassit', *Hesperia* 62 (1993), 95–113.
18 D.L. Saltz, *Greek Geometric Pottery in the East: the Chronological Implications* Ph.D. Harvard University (1978), 81–2.
19 Saltz compares the amphora with Protogeometric examples from Athens, W. Kraiker and K. Kübler, *Kerameikos I. Die Nekropolen des 12. bis 10. Jahrhunderts* (Berlin, 1939), pls. 43, 54–56 and K. Kübler, *Kerameikos IV. Neufunde aus der Nekropole des 11. und 10. Jahrhunderts* (Berlin, 1943), pl. 11. inv. 902 and 904. All these examples are earlier than Late Protogeometric vases found in the Kerameikos.
20 The vase is similar to the Middle Protogeometric amphora from the fill of the Toumba building, *Lefkandi II.1*, pl. 61.450.
21 M. Kochavi, 'Tripartite Pillar Building at Tel Hadar', in: *Mediterranean Peoples in Transition*, 468–78. This date is, of course, too early for the Late Protogeometric period in the Aegean.
22 J.N. Coldstream, 'The First Exchange between Euboeans and Phoenicians', in: *Mediterranean Peoples in Transition,* 357–9, pl. 1 and figs. 1 and 2.
23 *Lefkandi II.1*, pl. 58.371. The ring base of the vase found at Tel Hadar is a feature which is typical of the Late Protogeometric stage. Notice that the framed double zigzag on the vase from Lefkandi is used to divide the circles, while the vase found at Tel Hadar is painted under the incurved rim. Smaller size bowls with similar rims have also been found in the same Middle Protogeometric deposit at Toumba, ibid. 32–3, pl. 50.208.
24 Information about these vases was given by Prof. J.N. Coldstream and Dr. A. Gilboa. See also n. 26 and Coldstream (n. 1), 18.
25 *Lefkandi II.1*, 16–7, pls. 5.a, 9, 10 and 48.
26 A. Gilboa provided this information in a personal communication (15/9/97); see also ead., in: M. Iacovou and D. Michaelides (eds), *Cyprus: the Historicity of the Geometric Horizon* (Nicosia, 1999), 119–39.
27 It appears that the number of Protogeometric imports in the East increases almost every year as our Israeli colleagues excavate the deeper levels of their important sites and I expect that the number will continue to increase in the future. In addition, Jane Waldbaum with Jodi Magness have confirmed that sealed destruction levels from Ashkelon, Ekron, and Tell Batash-Timnah can be assigned to the Babylonian conquest of the 7th century BC. This context provides a secure date for the imported East Greek and Corinthian pottery before the end of that century and it also agrees with their traditional dating. J.C. Waldbaum and J. Magness, 'The Chronology of Early Greek Pottery: New Evidence from the Seventh-Century B.C. Destruction Levels in Israel', *AJA* 101 (1997), 23–40. So now we need some earlier material from these sites and then perhaps some agreement among colleagues working in the area on the dating of their strata.
28 The vases have been published by Desborough, *JHS* 77 (1957), 214. J.N. Coldstream re-examined them in V. Karageorghis, O. Picard and C. Tytgat, *La Nécropole d'Amathonte Tombs 113–367, II, Céramiques non Chypriotes* (Nicosia, 1987), 22, n. 10, pl. X. Lim. 46/3 and 46/4.
29 I.S. Lemos and H. Hatcher, 'Early Greek Vases in Cyprus: Euboean and Attic', *OJA* 10 (1991), 197–208.
30 Courbin (n. 17), 104–11.
31 Coldstream (n. 4).
32 This again might be accidental, since Sub-Mycenaean pottery has been identified in the southern coast of western Asia Minor and in Cilicia.
33 For the effect that events of the 12th century BC had on the whole region, see W.A. Ward and M. Sharp Joukowsky (eds), *The Crisis Years: The 12th Century B.C. From Beyond the Danube to the Tigris* (Dubuque, 1992). For an excellent account of events in Cyprus and Philistia, see M. Iacovou, 'Philistia and Cyprus in the Eleventh Century', in: *Mediterranean Peoples in Transition,* 332–44. For the emergence of Israel, see A. Mazar, 'The 11th Century in the Land of Israel', in: V. Karageorghis (ed.), *Cyprus in the 11th Century B.C.* (Nicosia, 1994), 39–57. For the arrival of the Aramaeans in North Syria, probably towards the end of the 11th century BC, see J.D. Hawkins, 'The Neo-Hittite states in Syria and Anatolia', in: *CAH III.1* (1982), 372–441.
34 D.B. Redford, *Egypt, Canaan, and Israel in Ancient Time*s (Princeton, 1992), 297–300.
35 Before the reign of Hiram I, who came to the throne in about 969 BC, Tyre does not appear to have been so important. For example, there are no references to Tyre in Assyrian official documents, such as in a tribute from the time of Tiglatpleser I (1114–1076 BC) in which other Phoenician cities are mentioned. Nor is Tyre mentioned as one of the most important towns visited by the Egyptian Wen-Amon who travelled along the Levantine coast in around 1070 BC: M.E. Aubet, *The Phoenicians and the West* (Cambridge, 1996), 27–37.
36 The activities of Solomon are recorded in Kings, I 9: 26–38 and 10: 1–13, 22 and 49. For a review of the archaeological evidence, see A. Mazar, *Archaeology of the Land of the Bible: 10,000-585 B.C.E.* (New York, 1992), 397.
37 I have traced the archaeological evidence for this *koine* in I.S. Lemos, 'Euboea and its Aegean koine', in: M. Bats and B. D'Agostino (eds), *Euboica: L'Eubea e la presenza euboica in Calcidica e in Occidente* (Naples, 1998), 45–58. More extensive discussion now in my *The Protogeometric Aegean: The Archaeology of the Late Eleventh and Tenth Centuries BC* (Oxford, 2002), chapter 6.
38 Evidence of the existence of a network of contacts within the so–called Euboean *koine* has been provided by the circulation of a type of amphora discussed in Lemos (n. 1), 216–7. The operation of this network indicates that the Aegean communities could organise exchange relations in the 10th century BC and did not need the presence of outsiders to exploit and establish them.
39 For a collection of such vases, *Lefkandi III*, pl. 125.a. On the same plate, two of the illustrated examples – b and c – belong to the Handmade Incised Wares. These elegant imports probably hold the same value as the imported vases from Cyprus and Phoenicia illustrated in the same plate, as d, e and f.
40 A copy of such vases is the elegant jug with double cut-away neck, *Lefkandi I*, pl. 263.a, which can be compared with the handmade version, *Lefkandi III*, pl. 121.e. Both vases were given to Late Protogeometric burials.
41 Some years ago, Tiverios argued that one of the reasons that southern Greeks colonised the Chalcidice might have been the exploration of gold from the river Gallikos, or Echedoros as it was known in antiquity: M. Tiverios, *To archaiologiko ergo ste Makedonia kai Thrake* 4 (1990), 323 n.25. For a discussion of the jewellery found in the tombs at Lefkandi see Lemos, *Protogeometric Aegean* (n. 37).
42 Amber beads were found in Toumba tomb T.47, *Lefkandi III,* pl. 139.n.
43 Shared access to imported goods from the East is more widespread in the Sub-Protogeometric period. In the Protogeometric period, it is mostly Lefkandi and Skyros which appear to have most of the imported goods: I.S. Lemos and H. Hatcher, 'Protogeometric Euboea and Skyros', *OJA* 5 (1986), 323–37.
44 On the Middle Protogeometric building at Toumba, see J.J Coulton, in: M.R. Popham, P.G. Calligas and L.H. Sackett with J.J. Coulton and H.W. Catling, *Lefkandi II.2, The Protogeometric Building at Toumba. Part 2, The Excavation, Architecture and Finds* (BSA Supp. 23; London, 1993).
45 The earliest import from Egypt might be the linen cloth given to the man buried under the Toumba building. E. Barber (pers. comm. 30/11/1991) wrote that 'the thread of the tunic appears to be both spliced and S-twisted', and that 'these are characteristics specifically of Egyptian linen. Furthermore, the weft looping found on the tunic is a well-known Egyptian method of weaving linen'. Prof. Barber has examined the garment in the National Museum in Athens. A detailed account of the Egyptian method of splicing linen can be found in her study, *Prehistoric Textiles* (Princeton, 1991), 45–61, 65–8, 145–62.
46 Some of the Protogeometric vases from Kos and Caria are similar in style to the pottery used by the Euboeans and the members of their *koine*, such as Thessaly and Skyros. One crater found at Dirmil might be an Euboean import: G.F. Bass, 'Mycenaean and Protogeometric Tombs in the Halicarnassus Peninsula', *AJA* 67 (1963), 358–9.
47 J.N Coldstream, 'The Greek Geometric and Plain Archaic Imports', in: *Excavations at Kition, IV. The Non-Cypriote Pottery* (Nicosia, 1981), 17–8, pl. XVI.2.
48 Kearsley (n. 13), 101–4.
49 Jane Waldbaum (n. 3), 56, fig. 2, has published an excellent photograph of the piece which has convinced me to date the skyphos earlier than thought before. The vase looks very similar to the skyphos from Kition. The piece, however, was found with a monochrome painted cup and comes from a very controversial context; see M.D. Herrera and J. Balensi, 'More about the Greek Geometric Pottery at Tell Abu Hawam', *Levant* 18 (1986), 169–71.
50 Bikai (n. 9), pl. 24.6, and Nitsche (n. 10), 18, fig. 3. He compares the vase from Tyre with examples found in the Pit fill on Xeropolis at Lefkandi.
51 Coldstream (n. 4), 92.

52 Aubet (n. 35), 42–5, and S. Frankenstein, 'The Phoenicians in the Far West: A Function of Neo-Assyrian Imperialism', in: M.T. Larsen (ed.), *Power and Propaganda* (Copenhagen, 1979), 263–73.
53 This comes from a Late Protogeometric-Early Geometric tomb reported by O. Alexandri, *A. Delt.* 22.1 (1967), pl. 96b.
54 E.L. Smithson, 'The Tomb of a Rich Athenian Lady, c. 850 B.C.', *Hesperia* 37 (1968), 78–116.
55 J.N. Coldstream, 'The Rich Lady of the Areopagus and her Contemporaries', *Hesperia* 64 (1995), 391–403.
56 Coldstream (n. 4), 92–3, and Boardman (n. 4), 179.
57 Boardman (n. 4), 176; Coldstream (n.1).
58 For the results of clay analysis, see M.R. Popham, H. Hatcher and A.M. Pollard, 'Euboean Exports to Al Mina, Cyprus and Crete: a Reassessment', *BSA* 78 (1983), 281–90. For the new finds at Oropos, see A. Mazarakis-Ainian, 'Oropos in the Early Iron Age', in: Bats and D'Agostino (n. 37), 179–215.
59 Desborough in *Lefkandi I*, 303.
60 These examples were found in a tomb together with a Late Protogeometric-Early Geometric Attic oinochoe, *Lefkandi III,* pl. 61 and pl. 114.a and c. Coldstream discussed the plates too when he compared them with imported examples found at Amathus, in 'Amathus Tomb NW 194: The Greek Pottery Imports', *RDAC* 1995, 192–4. As for the pendent semicircle skyphos, one example of Kearsley's type 2, which she dated to the second half of the 9th century BC, has now also been found in a Late Protogeometric-Sub-Protogeometric I tomb, roughly dated to the end of the 10th or early 9th century BC: *Lefkandi III*, pl. 46. Similar observations can be made about Kearsley's types 4 and 5 which have been dated to the late 9th and early 8th centuries BC, but examples have now been found in a Sub-Protogeometric II context at Lefkandi (ibid.), pl. 86. Kearsley in 'Greeks Overseas in the 8th Century B.C.: Euboeans, Al Mina and Assyrian Imperialism', in: G.R. Tsetskhladze (ed.), *Ancient Greeks West & East* (Leiden, 1999), 109–34, esp. 112–13, defends her initial dating of the skyphoi. Whether her computerised numerical analysis can or cannot accommodate skyphoi which according to her typology are transitional, the fact remains that the skyphoi illustrated in *Lefkandi III* can be securely dated by the presence of Attic vases.
61 Coldstream (n. 4), 93.
62 D. Ridgway, *The First Western Greeks* (Cambridge, 1992), 109–11.

Al Mina and the East

A Report on Research in Progress

Gunnar Lehmann

To John Boardman, il miglior fabbro

Even 60 years after C.L. Woolley's excavation at Al Mina, in what is today Turkey's Hatay province, the debate over the significance of his finds continues.[1] Woolley conducted his excavations in 1936 and 1937 at a 'small and insignificant mound'[2] that bore many names, a fact that only serves to point up the very namelessness and anonymity of the spot at the mouth of the Orontes. In his first report Woolley called this site Tall Shaykh Yusuf al-Maghribi ('Tal Sheikh Yusuf' or 'Sheikh Yusuf al Moghrabi' in his transcription from the Arabic), 'after an Alouite saint whose cenotaph crowns its highest point'.[3]

On sheet 'D IV Adana' of Richard Kiepert's map 'Kleinasien' (Berlin 1916) there are two place names in that area, 'el-Eskele' and 'Makâm el Chidr'. The first is a hybrid form of the Turkish '*eskele*', meaning 'harbour', with the Arab article 'el-' (or 'al-' in my transcription) in front. The second name is a 'cenotaph' (or *maqam* in Arabic) of an ʿAlawite saint, in our transcription from the Arabic 'maqam al-Khadr' with Khadr being the name of the saint. This is not the *maqam* at Al Mina itself, but a sanctuary at the beach near the mouth of the Orontes. A photograph of this sanctuary was published by Woolley,[4] who called it the 'monument of the Lord of the Sea'.[5]

The site of Al Mina is marked by the first sanctuary mentioned above, the *maqam* of Shaykh Yusuf al-Maghribi. The French land register map calls the village next to this *maqam* 'Lawshiya' ('Lawchie' in the French transcription and apparently not an Arab word, it may be a derivation from the Ottoman word '*lawsh*', meaning the gloomy, the dark or the weak.

Only in 1938 did Woolley for the first time use the name 'Al Mina', adding the name 'Sueidia' in order to localise the mound in the area of this modern town. 'Al Mina', or more correctly al-Mina, is Arabic and means nothing more than 'the harbour' (as does the already mentioned Turkish name 'el-Eskele').

Woolley started field work at the site in order to 'trace the connections, if such existed, between the civilization of Minoan Crete and that of the Asiatic mainland'.[6] While he did not find any Bronze Age remains at the site, he discovered one of the most important harbour sites of the Iron Age. Bronze Age remains did appear at another nearby site, apparently of outstanding importance, which, however, was never properly investigated: the mound of Sabuni, east of Al Mina, a few kilometers further upstream the Orontes.

Woolley's finds from Al Mina have since been distributed all over the world. The most important finds reached the Ashmolean Museum in Oxford and the collections of the Institute of Archaeology London. Another important part of the finds remained in Antakya, where it is kept in the local museum.[7] Further finds reached Damascus before the Hatay province was seized by Turkey from the then French Mandate government in Syria. In addition, I have seen and worked with material from Al Mina in the National Museum at Aleppo.

Apart from the Ashmolean Museum in Oxford and the Institute of Archaeology in London there are Al Mina finds in the British Museum in London, in the Museum of Classical Archaeology in Cambridge, in Birmingham, in Eton College, in Exeter, Edinburgh, Newcastle, Aberdeen, Reading and Winchester. In Australia some finds are in the Nicholson Museum[8] and further material might have been brought to Canada. While this list is rather discouraging to the scholar who wants to restudy the finds, John Boardman assured me that it is not even complete.[9]

Woolley published preliminary reports shortly after the completion of the excavations.[10] These publications were far from complete and in a number of additional publications further material was either published or discussed.[11]

The large quantity of Greek pottery found at the site was interpreted as an indication of a Greek settlement here: a Port of Trade, an *apoikia* of Greek merchants living here and trading with the nearby Aramean kingdoms of Syria. As Boardman wrote, 'it was also seen as a demonstration of the link which explained the strong infusion of oriental objects and ideas into the Greek world in the 8th century BC, heralding the orientalising period of Greek culture'.[12] Boardman's views of the site eventually became the standard interpretation of Al Mina.[13] He was able to demonstrate that Greek pottery and Greek influence in the Ancient Near East was not confined to Al Mina alone. Excavations at Tarsus, Tall Sukas, Ras al-Bassit and Tyre have shown that Greek Geometric pottery reached the shores of Syria, Phoenicia and Palestine in considerable quantities.[14] While Boardman preferred the term *emporion*, it was assumed that the presence of Greek pottery implied a significant presence of Greek merchants as well.

After the discovery and excavation of Greek sites like Naucratis in Egypt, a site long known from ancient Greek texts, this site, Al Mina, was the first *emporion* discovered solely by archaeologists, since there seems to be no reference to it in ancient Greek literature. Thus, the discovery of Al Mina and its eventual interpretation as an *emporion* was an important feather in the hat of archaeology. Archaeology had proved to be more than just a supplier of inscriptions and images illustrating ancient texts: it had actually added an entire new chapter to the early history of Greece.

This achievement was threatened, however, after publications in the 1980s, which challenged the interpretation of a mainly Greek *emporion* at Al Mina. For a discussion and the literature on what was now called the 'Al Mina effect' I refer to other contributions.[15] Waldbaum assumes that there is no evidence for a fully Greek cultural context at any site in either Syria or Palestine. While the Phoenicians, Syrians and other peoples of the Levant might have enjoyed the quality of Greek imports, Greek presence seems to be limited to small groups of

merchants in certain harbours. As Waldbaum puts it, one would not be surprised to find that the mixed population of the cosmopolitan harbours of the Levant included some Greeks, but they probably comprised only a small minority within the local population.[16]

It was against the background of this discussion that I became interested in re-studying the Phoenician and Syrian pottery from Al Mina. The Syrian and Phoenician pottery was first published by Taylor.[17] In the 40 years since the publication of her important article there has been considerable progress in the study of Phoenician and Syrian pottery.[18] While this seemed to be reason enough to re-open the matter, it was surprising to find a large amount of unpublished Syrian and Phoenician pottery in the Ashmolean Museum in Oxford and in the Institute of Archaeology in London. In addition to this material I was kindly invited by Dyfri Williams to participate in drawing up an inventory of unregistered pottery from Al Mina in the British Museum. In 1995 and 1996 I had the privilege of working at the British Museum with Louise Schofield, Lucilla Burn and Sally-Ann Ashton. During the registration of the pottery, it became evident that there was a considerable amount of unpublished Syrian and Phoenician pottery in the British Museum. These circumstances justified a renewed investigation into the relationship between Al Mina and the East, especially its Syrian hinterland and the nearby Phoenician ports.

The publication and the analysis of this material are still in progress, but it is time to give an account of the state of this research. This paper is limited to a preliminary evaluation of the more significant finds among the Syrian and Phoenician pottery from Al Mina. Greek and Cypriot pottery is deliberately excluded from these considerations.

Syrian and Phoenician pottery in Al Mina

Over 40 years ago, in 1959, Joan du Plat Taylor published her article on the Cypriot and Syrian Pottery from Al Mina.[19] This study was a major contribution to the investigation of Syrian and Phoenician pottery. However, Taylor had very little published pottery available for comparison. Many of her conclusions were based on the excavation reports of Megiddo, Samaria and Hazor in Palestine. There was almost no stratified pottery from Phoenicia in the 1950s. This situation greatly limited her ability to compare and date the Phoenician and Syrian pottery.

Since the late 1960s and until the outbreak of the civil war in Lebanon, excavations had been carried out at Sarepta and Tyre in Phoenicia. The studies of Patricia Bikai and William Anderson have laid the foundation for any further treatment of Phoenician pottery. Both authors not only added to our knowledge of Phoenician pottery typology, they also made an important contribution by studying the frequency of the pottery in their statistics of excavated pottery from Tyre and Sarepta.[20] These studies are now complemented by recent publications of excavations in the Akko plain in northern Israel, at sites such as Tall Abu Hawam,[21] Tall Keisan[22] and Tel Kabri.[23] This part of Israel was an integral part of southern Phoenicia. In Syria the work of Stefania Mazzoni at Tall Afis is of outstanding importance for the study of Syrian pottery.[24] Comprehensive studies of late Iron Age pottery in Syria and Lebanon have also been published by the present author.[25] Furthermore, there are now a number of investigations of Phoenician pottery in Cyprus.[26]

The local pottery of the Persian or Achaemenid period from Al Mina has never been studied comprehensively.[27] Ever since Ephraim Stern's ground-breaking investigation[28] of the material culture of Palestine there has been considerable progress in pottery studies of the Persian period in Israel, the Occupied Territories and Jordan[29].

Thus, we are in a much more favourable situation than Joan du Plat Taylor was in 1959. Today it is easier to demonstrate the links between Al Mina and the East. In this paper I hope to be able to contribute to the ongoing discussion of Al Mina's role in the interaction between the Ancient Near East and the Mediterranean in the Iron Age, in particular with regard to the role of Syria and Phoenicia.

Owing to the length of time that has passed since Woolley's excavations in 1936 and 1937, there are a number of limitations and particular problems in restudying his finds today. Firstly, one still has to rely on Woolley's summary of the stratigraphy, as presented by him in 1938. Secondly, his records are somewhat short and general in character. Thirdly, not much more information on the stratigraphy of the site has been added since. Although I was able to work at least with some of Woolley's field notes[30], there were only minor divergences from his publications. Since Woolley did not leave us any section drawings or heights on the plans published, his stratigraphy is hardly verifiable.

As for the pottery finds, it is unclear how much was discarded and what was kept and recorded. Although Woolley never stated his criteria for his selection, one may assume that he recorded in particular decorated pottery and complete vessels. Thus, it is impossible to apply quantitative analyses to his pottery finds.

The finds from Al Mina were divided between the British expedition and the French Mandate Service des Antiquités, which was then in charge of the Hatay province. There are only short lists and a few general photographs of groups of pottery laid out for division between the British and the French. Whatever remained in Syria and Turkey was divided again and eventually shipped to Antakya, Aleppo and Damascus. Access to those finds is extremely difficult today. Although I visited the three collections mentioned, this study relies almost exclusively on the material available in museums in Britain, Canada and Australia.

Some of the pottery was marked during the excavations. Often the layer in which the pottery was found is marked on the sherds, and sometimes there is an inked register number. Sadly, it is impossible to check this information. In some cases it seems that mistakes were made and the wrong levels may be indicated on some of the pottery. Nevertheless, such markings are all we have.

Many sherds were never marked, though for what reasons is unclear. This pottery is important, since much of it is dateable now as a result of comparisons with stratified finds at other excavations. It is also important to have evidence of each pottery type at Al Mina for the study of the distribution patterns of pottery in Syria and Phoenicia.

The pottery presented here is a sample of the Syrian and Phoenician pottery available for study today. Only well-dated comparisons are quoted here, more references and comparisons may be found in my *Untersuchungen*.[31]

Pottery of Al Mina Str. 9

Bowls with flaring rim (Figs 1.1 and 3.5)

The type has a flaring rim and was variously decorated in red slip techniques at different periods. This is Anderson's type F-1 at Sarepta.[32] With Bikai one may distinguish several sub-types,[33] and her type description is quoted here in detail:

Sub-Type 1. Bowl of thin-walled golden-coloured ware with a dark red slip.[34] The walls of the bowl are round without carination. For complete examples see Tyre Str. 8–9;[35] Tall Abu Hawam Str. III.[36] This type is represented in Cyprus by approximately 10 small sherds from Karageorghis's excavations at Kition.[37] Bikai dates this sub-type to the Salamis Horizon, *c.* 850–750 BC.[38]

Two examples of this type from Al Mina, both unstratified, are now recorded at the British Museum, GR 1995.12-29.5-6. Both fragments are without red slip, but their fine fabric and their burnish matches an example of this type without red slip from Tyre Str. 8.[39] Although the examples from Hazor Str. IX included here are dated to around 900 BC, other comparisons are dated after 850 BC. Thus, the fragments from Al Mina at the British Museum do not represent hard evidence for an occupation before 850 BC.

Comparisons: Cyprus, Salamis Horizon;[40] Tyre Str. 6–9;[41] Ras al-Bassit phase 4b ensemble B;[42] Tall Abu Hawam Str. III;[43] Hazor Str. IX.[44]

Fig. 1.1

Sub-Type 2. A bowl with a flaring rim, convex base with small incised platform or a thin disc base. Usually decorated with red slip on the interior and upper rim exterior.[45] Bikai dates this sub-type to the Salamis Horizon, *c.* 850–750 BC.[46] Early examples of this type from Rosh Zayit and Tell ʿAmal are dated to the late 10th century BC.

The fragment from Al Mina was previously published by the author, erroneously as unstratified.[47] In fact, the sherd is marked 'MN 9'. It is today in London in the collection of the Institute of Archaeology, without a register number. The groove inside the vessel at the carination point would place this bowl among the later examples of this type. A 9th-century BC date appears to be the earliest possible date for the bowl found at Al Mina.

Comparisons: Cyprus, Salamis Horizon;[48] Tyre Str. 2–5;[49] Rosh Zayit Str. IIa and b[50] (these bowls are dated to the late 10th century BC); typologically the bowl at Al Mina is closer to a bowl found in Rosh Zayit area C dated to the 9th–8th centuries BC;[51] Tell ʿAmal (Nir David) III (*c.* 950–900 BC);[52] Hazor Str. VII.[53]

Sub-Type 3. (No examples at Al Mina) A bowl with flaring rim, flat or convex base, reserve-slip and incised decoration on the exterior base.[54] Bikai dates this sub-type to the Kition Horizon, from *c.* 750 to the beginning of the 7th century BC.[55] In Tel Kabri this sub-type was found frequently in the destruction level E2a, which dates to the end of the 7th century BC.[56]

Comparisons: Cyprus, Kition Horizon;[57] Tyre Str. 2–5;[58] Hazor Str. V;[59] Tall Abu Hawam Str. III;[60] Tel Kabri Str. E2–E3.[61]

Sub-Type 4. (No examples at Al Mina) A bowl with flaring rim, flat or convex base with reserve-slip decoration, but without incised decoration.[62] Bikai dates this sub-type to the Kition Horizon, from *c.* 750 to the beginning of the 7th century BC.[63]

Comparisons: Cyprus, Kition Horizon;[64] Tyre Str. 2–4;[65] Ras al-Bassit phase 6 ensemble C;[66] Tall Abu Hawam Str. III;[67] Tel Kabri Str. E4.[68]

Sub-Type 5 (Fig. 3.5). A later derivate form in which the body walls are somewhat higher, the slip is thin and washy and is band-burnished or unburnished; reserve-slip occurs.[69] Bikai dates this sub-type to the Kition Horizon, from *c.* 750 to the beginning of the 7th century BC.[70] In Tel Kabri this sub-type was found frequently in the destruction level E2a, which dates to the end of the 7th century BC; here the vessels are often painted with a black line on the rim.[71] This type was also found in the destruction level of 604 BC at Ashkelon.[72]

The examples published by Taylor[73] seem to be of this latest sub-type. These vessels are not stratified, except for fig. 6.1 which is marked 'MP 205 SY6' on the sherd. According to the field register MP 205 was found in level 7–8. Woolley only stated that this type 'occurred freely in Level VIII upwards',[74] i.e. Str. 5–8.[75] Thus, the three bowls may in fact be from levels 5, 6 or 7, which is in accordance with the observations at Ashkelon and Tel Kabri, where this type was found in Str. E2 and E3 (*c.* 730–600 BC).

Comparisons: Al Mina Str. 7–8;[76] Al Mina unstratified;[77] Cyprus, Kition Horizon;[78] Tyre Str. 1;[79] Tall Keisan Str. 5;[80] Tall Abu Hawam Str. III;[81] Tel Kabri Str. E2–E3.[82]

Fig. 1.2

A jug with a spout and strainer.[83] There is a slight carination at the maximum diameter of the body. The jug is covered with a red slip outside. The vessel presented here for the first time in drawing was first published by Woolley in a photograph.[84] It is marked stratum 8–9, [MNP] 182. In the pottery statistics of Tyre this type occurs mainly in Str. 9.[85] However, Bikai's comparisons include also vessels with a painted decoration without a complete red slip. Thus, of her comparisons only those vessels are included with a complete red slip. It should be noted that, according to Bikai's observations, with Tyre Str. 9 'red-burnishing as a form of decoration begins to be more common than painting'.[86] A similar vessel from ʿEin Gev Str. 3, in

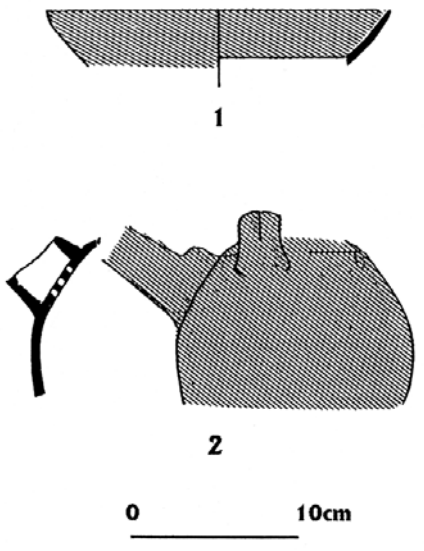

Figure 1 Pottery from Al Mina Str. 9

Palestine, is dated to the end of the 9th century BC.[87] Thus, according to conventional dating, the best parallels come from the time between *c.* 850 to 720 BC. This type is not attested in the 7th century BC. Several parallels from Çatal Hüyük in the ʿAmuq plain confirm this dating.[88]

Thus the additional evidence available today does not necessarily confirm Taylor's conclusion that the transition of levels Al Mina 9 to 8 lies somewhere near the middle of the 9th century BC.[89] It is not entirely clear what Woolley's marking of level 8–9 means. Was the jug really found at the transition between both levels or was the stratigraphical situation not entirely clear to the excavator?[90] According to the evidence from Tyre and the Palestinian sites, the middle of the 9th century BC is the earliest date that can be assigned to the jug. Thus, the jug indicates that the transition from Al Mina 9 to 8 should be looked for at around 800 BC or even later.

Further comparisons: ʿEin Gev Str. 3;[91] Carchemish, Yunus cemetery;[92] Hazor Str. V;[93] Hazor Str. VII;[94] Tyre Str. 9.[95]

Pottery of Al Mina Str. 8 and Str. 7–8

Fig. 2.1–2

Flat dishes with a coarse fabric were already noted by Taylor.[96] An additional 24 examples are among the newly registered Al Mina pottery at the British Museum (GR 1996.1-7.2, 4-9, 11-16, 18-25, 28, 34-35). Taylor describes the fabric as being 'thick sandy micaceous with a grey core and a worn red slip'. None of the dishes is stratified. This type of dish might be listed in the unpublished pottery catalogue of the 1936 season: Woolley mentioned under no. MNP 119 a 'large dish of Syrian red ware, with white bands, very fragmentary, diam. 36cm'. Other possible MNP numbers of the 1936 season which may refer to this particular type include MNP 471 and 476. MNP 119 and 476 were found in Al Mina Str. 8; but there is no way to check these assumptions and they remain speculative.

These dishes constitute one of the most frequent types in Iron Age layers of the 8th century BC in Syria.[97] They have a simple rim, which may be round, pointed or bevelled. The clay is coarse (5YR7/4 or 7.5YR7/6). Usually they are covered with a red (2.5YR4/6, 10R3/6 or 10R4/8) or brown (2.5YR4/8 or 2.5YR5/8) slip. There are two main variations, one with a flat base ring (type 1) and one with a high pedestal base (type 3) or a very high goblet-like stand (type 4). At Al Mina there is, so far, no evidence for a high or very high pedestal base. However, all variations have the same rim forms and thus it is difficult to exclude the possibility that there might have been high pedestal bases at Al Mina. The diameter of the dishes is usually 30–35cm, but there are also some with a 20–25cm diameter (type 2). The smaller dishes are often deeper than the large dishes.

An unpublished Neutron Activation Analysis by M.J. Hughes of the British Museum demonstrated that the fabric of the dishes varies significantly from site to site, even between sites which are very close to each other such as those in the ʿAmuq plain.[98] The dishes seem to have been produced locally and most of them were not traded to neighbouring regions. Hughes analysed dishes from Hama, Tell Rifaʿat, Çatal Hüyük, Tall al-Judayda and Tell Tayinat (the latter three sites situated in the ʿAmuq plain, cf. below).

The dishes were found in as many as 18 different sites in Northern Syria.[99] They appeared in large numbers at Tall Abu Danna Str. IId/A6, they are also found in Tall Afis area D Str. 4–6, Tall Mastuma Str. I, Ras al-Bassit phase 3 ensemble A, in the destruction caused by Tiglath-Pileser III at Tell Rifaʿat and in the destruction caused by Sargon II at Hama Str. E.[100]

Comparisons between Al Mina and the sites excavated by the University of Chicago in the ʿAmuq plain are of particular importance.[101] Al Mina served as a port for the settlements in the plain, which formed the state of Pattina or Unqi in the Iron Age.[102] The Iron Age sites in the ʿAmuq plain include Tell Tayinat (in Arabic Tall Taʿyinat), Tall al-Judayda (or Tell el-Judaidah) and Çatal Hüyük. The capital of this regional state during this period was apparently Tayinat, where substantial public architecture, including palaces and a temple, has been found.[103]

Dishes of the type discussed here were found in all three sites in the ʿAmuq plain in stratified contexts. The well-dated stratigraphy of Tayinat confirms the observations at Tell Rifaʿat and Hama, which point to the use of this type during the 8th century BC and its end after the Assyrian destructions at the end of the 8th century BC. It may be noted that level 4 of area I at Çatal Hüyük seems to have been destroyed and burnt down, as was Tell Rifaʿat (Arpad?) and Hama.[104]

It would have been of the utmost importance to know the strata of the dishes at Al Mina. Unfortunately, not one is marked with a level. Since the pottery assemblage of Al Mina Str. 8 generally matches the pottery of the above-mentioned Assyrian destruction levels in north Syria best (see **Fig. 17**), the dishes should be assigned to Al Mina Str. 8. However, there is no safe evidence to confirm this assumption.

Fig. 2.3

Red-slipped bowls with a thickened rim. The available comparisons indicate a Syrian inland tradition of red-slip. However, in Liddy's[105] chemical analysis of the fabric, using Atomic Absorption Spectroscopy, this vessel (his sample IA8) is similar to another vessel from Tyre (sample LV5) (cf. **Fig. 23**). Liddy assumes that both samples may be Cypriot.[106]

Parts of the rim may have been cut away as a decoration, thus creating an interrupted ridge or 'bar handle'. In addition, there may be grooves just above the base.[107] The example published here is almost identical to the one published by Taylor[108] and is also from the collection of the Institute of Archaeology, London (55.2024). However, it has no register number and is marked only with the field register number MNP 127A. Both examples were found at Str. 8. Comparative pieces were found at Hama Str. E[109] and at Tall Qarqur.[110] At least four additional unpublished examples were found at Judayda.

Fig. 2.4

This bowl is part of a class of pottery that comprises a number of different flat bowls and plates which are all red slipped and have a rim with an accentuated lip that is turned outside. Often the bowls and plates have a carination half way down their profile. Some of these sub-types have previously been included among the so-called 'Samaria-Ware', a misnomer which should be avoided. Rather, one should employ Bikai's 'Phoenician Fine Wares'[111] or, if one prefers a non-ethnic terminology, 'Levantine Fine Wares'.

The sub-types are distinguished according to their rim forms. The fabric is orange, fine and soft. The outer surface is often cut with a knife. A great many vessels of this class were

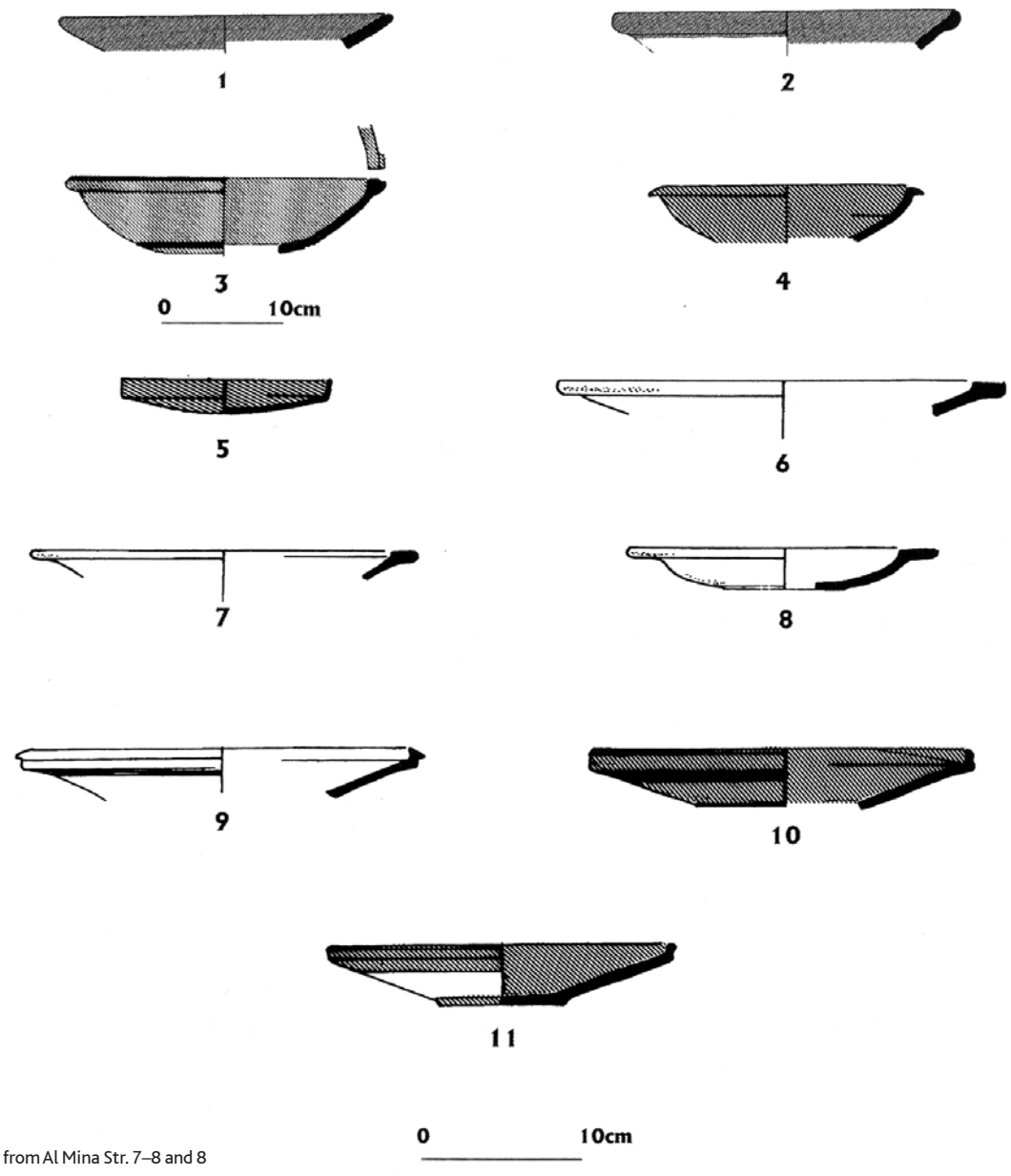

Figure 2 Pottery from Al Mina Str. 7–8 and 8

found in Kabri Str. E2 and E3, 98 examples, which constitute 3.7% of all diagnostics. This type belongs to late Iron Age assemblages: in Cyprus it occurs in the Amathus Horizon, *c.* 680–580 BC.[112] These bowls are also frequent at Tall Keisan Str. 5.[113] The example from Al Mina[114] has the older dark red burnished slip, which is replaced in the 7th century BC by the thin wash-like red slip. Thus, this bowl with a fine brown fabric belongs to the earlier examples of this class of pottery. Although Taylor does not mention it,[115] the bowl in the Institute of Archaeology, London, no. 55.995, is marked level 8.

Fig. 2.5
A very shallow bowl or lid with a sharply carinated rim. The wall with the rim is very narrow. The vessels usually have a red slip. The slip may be of the wash-like late type[116] and is usually burnished. There might be a black painted line at the rim.[117] There is an example from Byblos with the remains of an incised inscription, but most of this inscription is broken away.[118] In Cyprus this type occurs in the Kition Horizon, *c.* 750–680 BC.[119] One example was found in Tyre Str. 4.[120] The bowl, MNP 109, published by Taylor was found in Al Mina Str. 8 room 4 and is today in Oxford (Ashmolean O 1937.907).[121]

Fig. 2.6–8
Shallow dishes with a wide rim that is pulled out. The bowls are of well levigated fabric and always well finished and burnished. There are two sub-types, one of them has a carination or 'step' immediately under the rim on the exterior, which is also clearly visible inside the dish.[122] None of the three dishes illustrated here have this 'exterior step'. According to Bikai's typology of the pottery at Tyre, the carination is the feature that distinguishes her types pls 3 and 4.[123] In her pl. 3 the carination is absent; in pl. 4 it is present. In Bikai's type pl. 4 the rim is sometimes 'drooping'. In the statistics of Sarepta the type (X-4 and X-5) occurs mainly in Str. C1.[124] In Cyprus the type occurs in assemblages of Bikai's Kition Horizon, *c.* 750–680 BC.[125] In Tyre (pls 3 and 4) it is attested mainly in Str. 1–3.[126] The type is also found frequently in excavations in Palestine, e.g. in Tall Keisan Str. 5.[127]

One bowl published by Taylor[128] is of Bikai's type pl. 3 while another one[129] is of Bikai's type pl. 4. Neither of these two is stratified,[130] but the two examples presented here are from Str. 8 (**Fig. 2.6–7**).[131] The type seems to have been in use well into the 7th century BC. One later form with a very wide rim (**Fig. 5.1**)[132] is marked as having been found in Str. 6–7. In Tel Kabri Str. E2 this type is attested in the second half of the 7th century BC.[133]

Fig. 2.9–11
The characteristic feature of this flat plate is the ridge on the outer edge of the rim. The plate is usually red-slipped. There are three sub-types:

1. The rim is only slightly pulled outward.[134]
2. The rim is distinctly pulled outward.[135]
3. The rim is only slightly thickened.[136]

This type occurs also as a silver bowl, found in tomb 928 at Pontecagnano (Salerno).[137] It is possible that such metal bowls are the actual model for this pottery type. According to Bikai, all three sub-types may in fact be contemporary (pers. comm.). In Cyprus this type occurs in the Kition Horizon, *c.* 750–680 BC.[138] In Sarepta this bowl (type X-10) appears mostly in Str. C2.[139] In Tyre the type (Fine Ware pl. 7) occurs in Str. 2–5.[140] However, there is only scarce evidence for this type and Bikai assumes that these bowls end at Tyre with Str. 2, at the beginning or even before the beginning of the 7th century BC.

Three bowls of this type were found in Al Mina. According to Taylor, two may have been found in levels 6–7; however she never explicitly states the stratum for each of the vessels.[141] The bowls themselves are not marked and there is no additional information in the files (Institute of Archaeology, London, nos. 55/1041 and 55/1044). A third bowl comes from Al Mina Str. 8 room 8 (field register MNP 186A).[142] In the ʿAmuq plain the type was found in Judayda, but it is still unpublished and the bowl was most probably found out of context.

Further examples: Byblos cemetery 'K' in K12;[143] Ras al-Bassit phase 7 ensemble F;[144] Zincirli unstratified;[145] Hazor Str. V;[146] Tall Keisan Str. 5.[147]

Fig. 3.1 (cf. Fig. 6.4–6)
A bowl with a ridge around the rim. This ridge is cut and interrupted, thus creating a 'bar handle'. There is a groove immediately above the base. The bowl is of a particular 'Grey Ware', a black fabric, which is rare, but characteristic for Assyrianizing pottery assemblages of the 7th century BC (cf. **Fig. 6.4–6**). It is covered with a grey or black slip. While most bowls made of 'Grey Ware' were found in Str. 5 and 6, the bowl **Fig. 3.1** was found in Str. 8 (British Museum GR 1968.3-25.111).
An almost identical second bowl has now been registered at the British Museum (GR 1995.12-31.13+14). This second bowl is marked stratum '6–8'. For a discussion of this fabric and further vessel forms see **Fig. 6.4–6** (below).

Comparisons: Tell Batash Str. II (7th century BC);[148] Hazor Str. VA, somewhat similar, but smaller and without a groove above the base, of grey-buff fabric and burnished inside and outside.[149] Bowls of similar form, but not of 'Grey Ware', were found in Tall Abu Danna Str. IId/A6 fosse 77/17[150] (the pit, 'fosse', makes it doubtful that the piece belongs to Str. IId/A6) and Str. IIc/A5.[151] Taylor compares the bowl with a type of basalt bowl, which is frequent in the 8th and 7th centuries BC.[152]

Fig. 3.2
Bowls with straight, funnel-like sides and a low carination just above the base. The rim is 'drooping' and the vessels are usually red slipped and burnished.[153] This is the 'pie-dish'-type in Woolley's unpublished pottery catalogue of the 1936 season. The type (X-3) occurs in Sarepta mainly in Str. C1.[154] In Cyprus such bowls are attested in the Kition Horizon, *c.* 750–680 BC.[155] At Tyre type Fine Ware pl. 5 corresponds to this bowl type, although it includes a wider range of wall forms.[156] The type occurs in Str. 2–5, with most examples there found in Str. 4. Taylor published three examples,[157] one (no. 15) from Str. 8, the other two unstratified. The bowl illustrated here was found in Str. 8 room 8.[158] Two more 'pie dishes' are reported by Woolley in the unpublished pottery catalogue of the 1936 season, MNP 137 and 184, both Al Mina Str. 8.

Further examples: Ras al-Bassit phase 6 ensemble C;[159] Tel Akhziv;[160] Ayia Irini tomb 14/2;[161] Kition II Bothros 10/19 Fl. 3.[162]

Fig. 3.3
A small bowl with an incurving rim. Various decorations occur, red-slipped completely or partially (reserve slip) and sometimes a black band on the rim.[163] In Cyprus this type occurs in the Kition Horizon, *c.* 750–680 BC.[164] In Sarepta this bowl (type F-2A) appears mostly in Str. D1–C2.[165] In Tyre the type (Fine Ware pl. 4) was found mainly in Str. 1–4.[166] The bowl appears also in Tall Keisan Str. 4–5.[167] In Tel Kabri 79 examples have been found, representing 3.1% of all diagnostic pottery. Most bowls are from the 7th century BC stratum Kabri Str. E2, but some were found in Str. E3. In Str. E2 the bowl is usually partially red-slipped (reserve slip) although completely red-slipped examples occur.

The two examples published by Taylor are both from Str. 8.[168] Another example from Oxford (Ashmolean 1937.999; **Fig. 3.3)** was also found in Str. 8.[169] An unpublished bowl from Str. 6 (**Fig. 6.3**), today in London (Institute of Archaeology 55.1053) demonstrates the full time range of this type, which disappeared only after the end of the 7th century BC.[170]

Fig. 3.4
Large tripod bowls with a thick wall and a red slip. Often the legs are cut off, apparently after one of them broke. The vessel illustrated here was found in Str. 8 and is today in Oxford (Ashmolean 1937.918).[171] This kind of large bowl seems to be more an inland tradition of Syria, since so far most examples have been found there and not on coastal sites. The few stratified examples include:

Tayinat Building IX,[172] one of the few published pottery vessels from the ʿAmuq plain, this bowl (t3408) seems to belong to the Building Period 2, which was dated to *c.* 825–720 BC.[173]

An unpublished tripod vessel of this type (CP290), red slipped and burnished, was found in Çatal Hüyük. Its stratigraphical position does not contradict the dating proposed here. Unstratified bowls of this type were found in Tall Halaf[174] and Sidon.[175]

Further examples: 'Athlit tomb X;[176] Hazor VI;[177] Megiddo Str. III and IV;[178] Tel Yoqne'am Str. 10 (800–750 BC).[179]

At Al Mina another type of tripod bowl occurred. This one is without a red slip, but with a geometric painted decoration. A painted tripod leg from such a vessel, with 'black and red on white' decoration (Woolley, Al Mina field register of small finds, 1936, no. MN 365) was published by Taylor.[180] It is similar to a restorable, but unpublished tripod bowl and additional fragments of a bowl from Judayda (y324 and y459). The leg from Al Mina was labeled level '8' in the unpublished small find catalogue of the 1936 season, which was corrected later to level '5'.

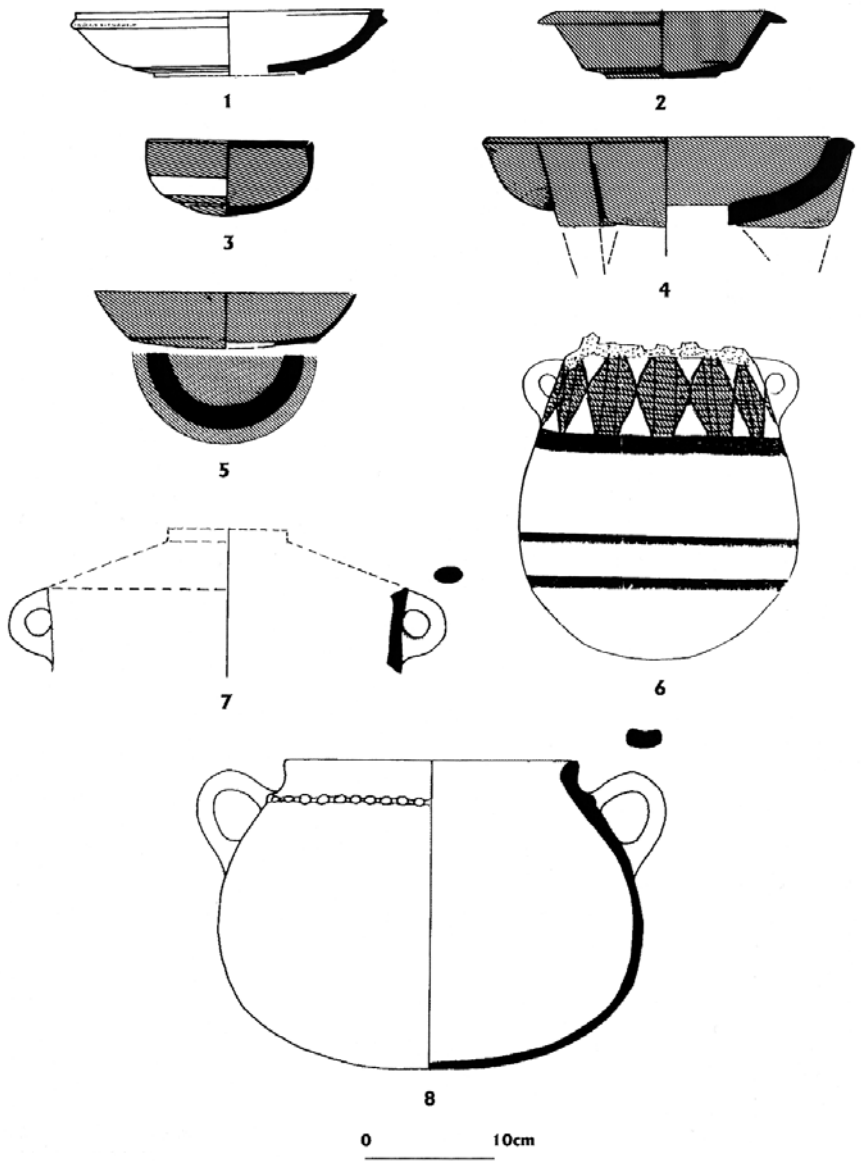

Figure 3 Pottery from Al Mina Str. 7–8 and 8

Fig. 3.5, Al Mina Str. 7–8 (SY6),[181] for a description see the discussion of **Fig. 1.1** subtype 5.

Fig. 3.6
Painted jars in the form of transport jars (amphorae), but decorated much more elaborately, occur frequently in Phoenician Iron Age contexts.[182] The vessel illustrated here was first published by Woolley.[183] It is painted in black and red pattern, and the rim is broken. The jar is today in Oxford (Ashmolean 1937.405). It might be the jar MNP 321 of the unpublished field register, which was found in Str. 8; the vessel itself is not marked with any level, but the description and the dimensions of the field register match the actual vessel. It is difficult to find exact parallels to this jar. An amphora found in Larnaca-Tourabi tomb 41[184] is similar, as is another amphora from Kition (area II, Φ2, between floors 3 and 2A).[185] However, the amphora from Kition is much larger than the rather small vessel from Al Mina. Both parallels from Cyprus are of Bikai's Kition Horizon, *c.* 750–680 BC.[186]

In five tombs at Ras al-Bassit similar amphoras were found. All these tombs were dated by Courbin to the 8th century BC: Ras al-Bassit tomb 2;[187] Ras al-Bassit tomb 12;[188] Ras al-Bassit tomb 27;[189] Ras al-Bassit tomb 28;[190] Ras al-Bassit tomb 34.[191]

Large, closed vessels with a ring base and two symmetrical handles attached to the rim and the shoulders of the vessel were found at Al Mina.[192] They resemble 'table amphoras', but they are large and probably for storing water or other liquids in the household. The vessels are about 45–50cm high. Some are painted with geometrical patterns, others are plain. Woolley reports that one such vessel was found in Str. 8 room 4.[193]

In the ʿAmuq plain the vessels appear in relatively large numbers at Çatal Hüyük and Judayda, with the majority of the finds in the destruction levels of Phase Oc.[194] Another photograph shows complete vessels, among them a 'table amphora', on the floor of room M12/3 of area II in Çatal Hüyük.[195]

Further examples: Ras al-Bassit tomb 12;[196] Ras al-Bassit tomb 14;[197] Salamis tomb 1;[198] (Bikai[199] dates this tomb to her Salamis Horizon, *c.* 850–50 BC); Tarsus 19, Middle Iron A.[200]

Apparently, Woolley did not pay much attention to undecorated vessels. There are almost no storage or transport jars in British museums. The rough sketch of a transport jar is all

that is known about this kind of vessel from the early strata at Al Mina.[201] In addition, Woolley's typology is so imprecise that this particular type, called 'type 2' in his typology, ranges from Str. 9 to 4. Whoever is familiar with the rapid development of transport jars in Syria in the 8th and 7th centuries BC, knows that this long range of the same type is impossible. Woolley reports the presence of 'a big amphora of type 2' in Str. 8 in room 3, 'under the foundations of the Level 7 wall between [rooms] 3 and 4'. 'A similar amphora came from [Level 8] room 10; from [Level 8] room 4 came fragments of at least three others … but it was doubtful whether the type 2 examples did not belong to Level 9'.[202]

Woolley's sketch of 'type 2' is characterised by a small simple rim, round shoulders with a carination between shoulder and body and a long and straight body with a round, not a pointed base.[203] The maximum diameter of the body is not wider than the shoulder, a feature that is an informative detail. There is only one type of transport jar in this chronological context which matches all these criteria, Lehmann's type 382.[204] For parallels compare: a vessel from an underwater site on the Palestinian coast;[205] Sarepta Str. C2;[206] Tyre Str. 4 Area 8;[207] Salamis tomb 1/135-136;[208] Hazor VI.[209]

In Cyprus this type occurs in the Salamis Horizon, *c.* 850–750 BC.[210] In Sarepta this transport jar (type SJ-13A) appears mostly in Str. C2–C1.[211] Three examples were also found at Pithekoussai tombs 441, 513 and 614.[212] This is significant, since Buchner stresses the contacts between Pithekoussai with the northeast Levant, exactly the location of Al Mina. The vessels from Pithekoussai are dated to the second half of the 8th and the beginning of the 7th century BC. One has to be cautious, however, not to read too many details into this rough sketch.

Fig. 3.7
Among the hundreds of sherds that reached British museums, there are only two small fragments of undecorated plain transport jars. One of the fragments registered in 1995 at the British Museum (BM GR 1995.12-20.1) is marked level 8 room 8. Only the handle and a very small part of the beginning of the shoulder are preserved. However, this is enough to identify the type. The small handle, only 5cm high, the orange fabric (5YR6/6), the sharp shoulder carination of approximately 20°, the straight wall, and the shoulder diameter of 27–30cm limit the range of possible dates. This combination of features cannot be limited to only one type, but it is possible to limit it to a certain number of types. These features appear in Sarepta in this particular combination in Str. C2–B.[213] In Tyre they begin with Str. 2 but are most common in Str. 1.[214] These jars begin in Tall Keisan Str. 5.[215] In Tel Kabri transport jars with these features were found in the Str. E2b and the destruction level Str. E2a of *c.* 600 BC.[216] Shortly after that date these characteristics disappear. Thus, it is possible to limit the date range of the transport jar to between the end of the 8th and the end of the 7th century BC. Only at Sarepta does this type already occur in the middle of the 8th century BC or even earlier within Str. C2.

Fig. 3.8
As with transport and storage jars, cooking pots seem to have been mostly discarded by Woolley during the excavations. However, a limited number of cooking pots were registered in 1995 at the British Museum. One of them (BM GR 1995.12-27.1) is illustrated here. It was found in Str. 8 room 8. Almost identical cooking pots were excavated in the ʿAmuq plain. Other cooking pots with a high neck or everted rim include examples from Str. 6–7 (three examples in the British Museum). A cooking pot from Shaykh Hassan is very similar.[217]

Holemouth cooking pots are more frequent. The examples registered in 1995 in the British Museum are mostly from Str. 6–7 (five examples, not illustrated here). Very close parallels come from sites in the ʿAmuq plain, most of them unfortunately unpublished.

An unstratified cooking pot in the British Museum (GR 1995.12-27.88, not illustrated here) seems to be of Phoenician or coastal tradition. It is remarkable that the majority of the cooking pots found in Str. 8 and 6–7 are of Syrian types. Thus, Phoenician cooking pots are represented by only one single example so far, while there are no Greek cooking pots at all. This is in contrast to other sites where Greek cooking pots were found, i.e. Mezad Hasavyahu[218] and Tel Kabri.[219] Niemeier argues convincingly that cooking pots may be linked to conservative behaviour such as diet customs and thus can help to identify ethnic groups, such as Greeks in the case of Mezad Hashavyahu and Tel Kabri.[220] Significantly, exactly this kind of evidence is missing in Al Mina in Str. 6–10.

A number of cooking pots are registered in the unpublished pottery catalogue of the 1936 season; while their descriptions match the Syrian cooking pots now recorded at the British Museum, it is impossible to identify any particular vessel in the British Museum or in other collections:

MNP 120, level 8, 'cooking pot of coarse black smoked ware, one ribbon handle remains, h. 9cm';
MNP 617, level 8–9, '3 fragments of burnished black handmade pottery with vertical fluting, finger impressions and ribbon handle';
MNP 669, no level, 'cooking pot, dark clay, fragmentary, 27cm'.

More than a dozen bichrome-decorated jugs with a globular body and a mushroom-lip were found in Al Mina Str. 8.[221] The mushroom-lip rim is square cut and slightly drooping. This type of jug corresponds to Jug type 4 in Tyre, occurring in Str. 2–4.[222] In Cyprus it is found in the Kition Horizon, *c.* 750–680 BC.[223] Briese dates this type to the second half of the 8th century BC.[224] In Kinneret (Tall al-'Urayma) Str. IA, a site in northern Galilee, not far from Tyre, a jug of this type was found; the excavator dates this stratum to 733–700 BC.[225]

There are only a few juglets in other excavations which adequately correspond to this type and it is unfortunately unstratified at Al Mina.[226] Taylor reports two of these squat necks in a fine or drab fabric with some lime and mica as temper, but only one is illustrated.[227] The only exact parallel was found in Hazor Str. VI.[228] It is remarkable that the closest comparison thus comes from the hinterland of Tyre, far south from Al Mina. Jug type 1 at Tyre, occurring mainly in Str. 1–3, is very similar.[229]

There are many other juglets with more tapering necks, as opposed to the straight necks of the juglets from Al Mina and Hazor.[230] On Cyprus this type was found in the Kition Horizon, *c.* 750–680 BC.[231] In Tyre these comparisons occur mainly in Str. 2 and 3.[232] In Sarepta the tapering neck is typical in Str. B–C1.[233]

An odd-looking large clay object was found in Str. 8. The

field register described the object, MNP 659, as a 'model boat in drab pottery, found containing ashes, length 39cm.' Unfortunately, this object was never photographed or drawn, but it is reasonable to assume that this 'boat model' is in fact the same type of object found at Zincirli and published by Andrae.[234] The find circumstances at Al Mina, especially the ashes mentioned, may indicate the function of this object.

There are a number of parallels: Çatal Hüyük in the ʿAmuq plain (two unpublished examples, the first, b866, was in 1989 on display in the museum of Antakya; the second, b2486, is today in the Museum of the Oriental Institute, University of Chicago); Tall Ghassil;[235] Megiddo Str. III;[236] Zincirli.[237]

Pottery of Al Mina Str. 7

Fig. 4.1–2
Mushroom-lip juglets were studied in detail by Bikai[238] and Anna Peserico.[239] Examples of such juglets from Al Mina were first published by Taylor.[240] Mushroom-lip juglets with a complete red slip and a pronounced carination point below the neck appear in three sub-types: small, medium and large.[241] The ones discussed here are exclusively of the small type.[242] In Tyre this type was identified as Jug type 5, which occurs in Tyre Str. 2 and 3.[243] In Cyprus it was found in the Kition and the Amathus horizon, *c.* 750–580 BC.[244] Bikai and Peserico date the beginnings of the many examples found of this type to the end of the 8th century BC, i.e. after 750 BC. The type continued to be in use in the 7th century BC.[245] After *c.* 600 BC it disappeared in the Near East and only specific variations, different from the type discussed here, continued in Punic contexts in the western Mediterranean.[246]

Six examples were published by Taylor.[247] Two are unstratified.[248] Two are said to come from levels 6–7,[249] although they are not marked so and there is no additional information on their stratification in the files of the Institute of Archaeology, London. However, these may be sherds from a group marked MNP 407 in the field register, where the pottery is described as 'red ware sherds' from levels 6–7. But this is only a guess. One sherd is marked level 7 on the body.[250] The last one[251] is listed in the field register of 1937 (MP 180) as having been found in level 7. A drawing of the juglet is sketched on the card of the field register. None of the sherds of this type was found in Str. 8.

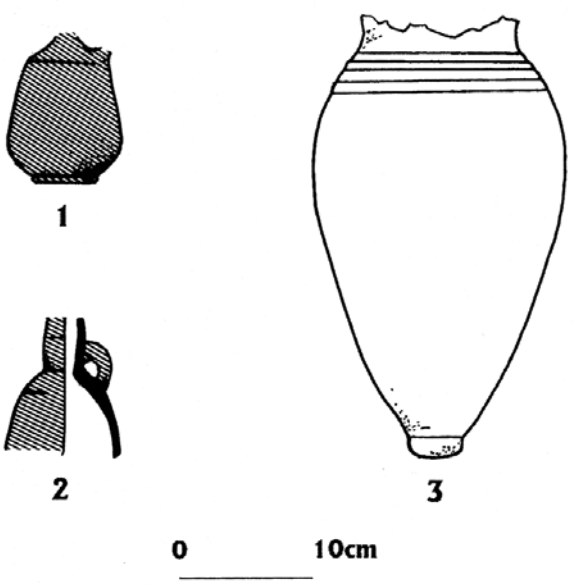

Figure 4 Pottery from Al Mina Str. 7

Fig. 4.3
Large oval closed vessels with a shoulder and a narrow, tall neck are typical for Assyrian or Assyrianizing pottery in Syria and Palestine during the late 8th and 7th centuries BC. This vessel is redrawn after a sketch by Woolley and was found in Str. 7 room 4.

Comparisons: Assur tomb 212;[252] Assur tomb 239;[253] Tall Halaf Gruft 2;[254] Tall Keisan Str. 5;[255] Tel Kabri Str. E2–E3;[256] Tel Yoqne'am Str. 9 (according to the excavators *c.* 720–600 BC).[257]

Pottery of Al Mina Str. 6–7

(**Fig. 5.1**, for description see **Fig. 2.6–8**)

Fig. 5.2–3
Bowls with a carinated profile inside caused by a ridge about half-way down the interior wall. Some of the bowls are red slipped,[258] some are plain.[259] This is one of the most frequent forms at the end of the 8th and during the 7th century BC and was studied in detail by A. Chambon.[260] In Cyprus it was found in the Kition Horizon, *c.* 750–680 BC.[261] In Tyre it occurs mainly in Str. 1–4.[262] In Sarepta it appears in Str. C1.[263] While this is one of the most frequent bowl types in coastal pottery assemblages, it apparently does not occur in the nearby ʿAmuq sites of the inland.

In Al Mina several bowls of this type were found.[264] One unstratified example was registered now at the British Museum (GR 1995.12-12.49). Taylor mentioned six more unpublished sherds from Str. 5 to 8. These levels seem to indicate the time range of the type at Al Mina.

Further comparisons: Tel Akhziv tomb 24;[265] Tel Kabri Str. E2–E3;[266] Keisan Str. 5.[267]

Fig. 5.4
Taylor described this bowl as being of a coarse brown fabric with a dark red slip.[268] This type is not frequent in coastal pottery assemblages and seems to be more typical in inland Syria. The bowl was found in Al Mina Str. 6–7 (according to files in the Institute of Archaeology, London, no. 55/1047).

A similar vessel of 'reddish-drab' fabric (no red slip) was found at tomb YC72 of the Yunus cemetery of Carchemish.[269] But this plate, with a diameter of 32cm, is much larger than the bowls listed here (note that Taylor[270] by mistake assigns this vessel to the wrong tomb, YH4; there were no Cypriot imports in tomb YC72 where the vessel was actually found). Taylor compares the bowl with a type of basalt bowl, which is frequent in the 8th and 7th centuries BC.[271]

Comparisons: Tall Abu Danna Str. IIc/A5;[272] Tall Abu Danna Str. IId/A6: Fosse 77/17 (intrusive from Str. IIc/A5?);[273] Hazor Str. III.[274]

Fig. 5.5
Deep keeled bowl with high, almost vertical sides which turn with a carination into the base. The vessel is usually red slipped. In Al Mina one bowl was found in Str. 6–7, another similar one is unstratified.[275] Comparisons for this type are dated to the end of the 8th and the 7th century BC.[276] Several stratified examples found in Judayda in the ʿAmuq plain confirm this date. Comparisons: Tall Abu Hawam Str. 3;[277]; Tel Kabri unstratified;[278] Tall Keisan Str. 5;[279] Tall Mastuma Str. I;[280] Tabara al-Akrad.[281]

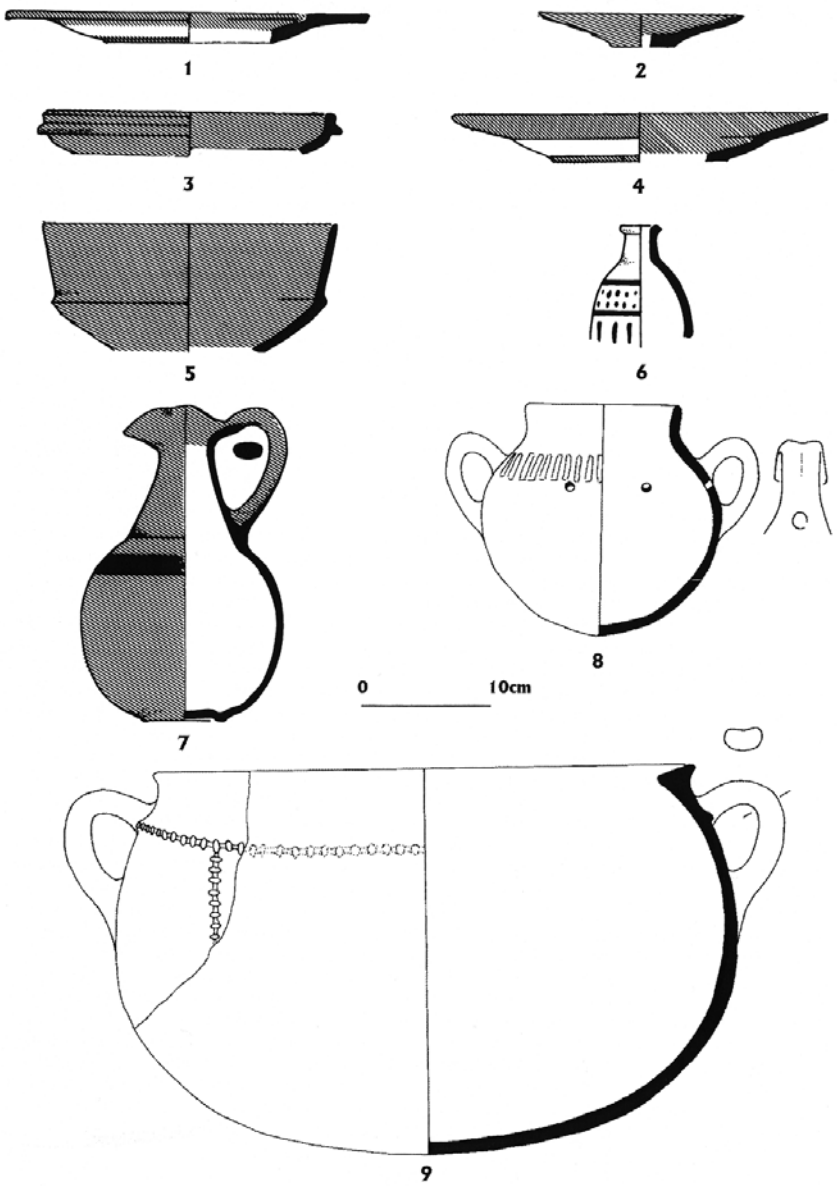

Figure 5 Pottery from Al Mina Str. 6–7

Fig. 5.6
Small bottles with painted decoration and a glaze-like surface treatment. This type was studied in detail by Peltenburg.[282] The bottle illustrated here comes from Al Mina Str. 6–7 and is today in Oxford (Ashmolean Museum 1963.6). Another fragment from Str. 6–7, room V2, was published by Peltenburg.[283] One was found in Str. 7–8.[284] More fragments were found in Str. 8.[285] Two fragments were found in Çatal Hüyük and are now in the Oriental Institute in Chicago.

Further comparisons: Afis Area E1 Str. 2;[286] Ras al-Bassit;[287] Ras al-Bassit phase 7;[288] Sakcagözü Str. X;[289] Tarsus unstratified;[290] Zincirli, destruction level, found with an Assyrian clay tablet with the eponym of Banba, 676 BC;[291] Zincirli unstratified.[292]

Fig. 5.7
Red slipped jug with a pinched trefoil rim and a long conical neck. This is one of the best studied types of Phoenician pottery.[293] Metal jugs of this form were analysed by Grau-Zimmermann.[294] Grau-Zimmermann dates the type to the end of the 8th and the 7th century BC.[295] Gjerstad dates it even later, exclusively in the 7th century BC.[296]

In Tyre this type, Jug 7 with a conical neck was found in Tyre Str. 4 and seems to appear during the 8th century BC. All other comparisons confirm this date, except the very early examples from Hazor Str. IXB and Str. VIII.[297] These jugs have two kinds of handles, double-strand (or double rope) handles, occurring in Tyre Str. 2–9) and strap handles with a rectangular section (occurring in Tyre Str. 2–5). In Sarepta the type, DJ-14, was found in Str. D1 and C1.[298] Bikai's reevaluation of Phoenician pottery in Cyprus assigned this type to the Kition Horizon, *c.* 750–680 BC.[299] The jug illustrated here was published by Taylor;[300] it was found in Al Mina Str. 6–7 SY4.

More fragments of this jug type are now registered at the British Museum:

fragments with a conical neck (GR 1995.12-12.56 and 62, two fragments);
strap handles (GR 1995.12-12.55, 57-60, five fragments);
a double strand handle (GR 1995.12-12.56) and
a rim (GR 1995.12-12.54).

Fig. 5.8
Cooking pot with a simple rim and a neck (BM GR 1995.12-27.3).

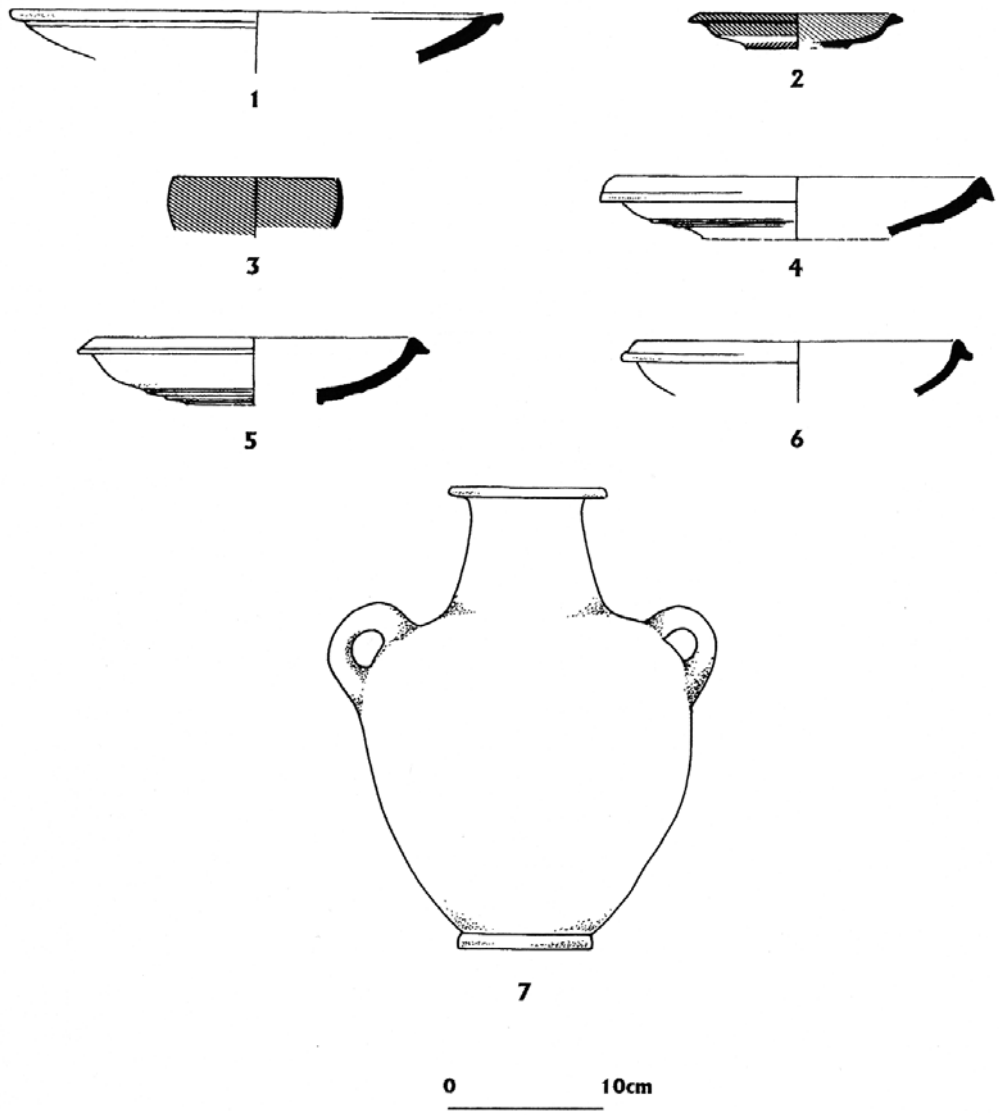

Figure 6 Pottery from Al Mina Str. 6

There are holes drilled into the upper part of the walls. At the lower joint of the wide handles with the wall, there is a deep finger impression made by the potter. The pot was found in Al Mina Str. 6–7. A similar cooking pot was found at Tall Shaykh Hassan on the Euphrates.[301]

Fig. 5.9
A large holemouth cooking pot with a thickened rim and bands with finger impressions, found in Al Mina Str. 6–7 (BM GR 1995.12-27.4). Holemouth cooking pots are the most typical form of cooking pots in north Syria during Iron Age II. They start during the 9th century BC and continue into the 7th and early 6th century BC. During the 6th century BC they are replaced by a new tradition of cooking pots with a thin, fine wall and a neck (**Fig. 13.3**).

Pottery of Al Mina Str. 6

Fig. 6.1
Shallow dish with a burnished surface outside and a diameter of 32cm. The fabric is grey (10 YR 4/1). The rim is turned outward and droops to the inside. There are no parallels for this platter: it was found in Al Mina Str. 6 (BM GR 1968.3-25.113).

Fig. 6.2
A small and shallow dish with reserved slip decoration.[302] A similar dish was found in Tarsus, unfortunately unstratified.[303]

Fig. 6.3. Al Mina Str. 6 (Institute of Archaeology, London, no. 55.1053), for description see **Fig. 3.3**.

Fig. 6.4–6 (cf. **Fig. 3.1**)
Bowl of 'Grey Ware', a black fabric, which is rare, but characteristic for Assyrianizing pottery assemblages of the 7th century BC. It is covered with a grey or black slip. In Al Mina, most bowls made of 'Grey Ware' were found in Str. 5 and 6. The rims of **Fig. 6.4–6** are externally thickened and often 'stepped'. Frequently there are also grooves just above the base, which were cut into the wall. The examples at Al Mina are all polished or burnished to a shiny finish on the exterior. The bowls are usually slightly larger in diameter than the 'Assyrian Palace Ware'.[304] At the British Museum an additional number of fragments from Al Mina were recently registered (GR 1995.12-31.2-5, 13-15). An unpublished fragment was found in Al Mina Str. 5 and is today in Oxford (Ashmolean Museum 1954.465/2). The unpublished pottery catalogue of the 1936 season listed 2 vessels: MNP 648 and 651, both from Al Mina Str. 6.

For examples of earlier Grey Ware ceramics see the

discussion of bowl **Fig. 3.1**, found in Str. 8 (BM GR 1968.3-25.111). An almost identical second bowl was recently registered in the British Museum (GR 1995.12-31.13+14). This second bowl is marked stratum '6-8'.

Comparisons: Palestine and Transjordan;[305] Tell Ahmar area C (650–600 BC);[306] Tell Batash Str. II (7th century BC);[307] Dor (7th century BC);[308] Tell Jurn Kabir group C[309] (late 7th century BC, with examples of earlier Grey Ware vessels[310]); Nimrud: Fort Shalmaneser;[311] Nimrud Northwest Palace room M (*c.* 700 BC);[312] Nineveh area MG22 (middle decades of the 7th century BC).[313]

Since Grey Ware bowls were frequently found in Transjordan, it has been suggested that they should be identified as Edomite or Ammonite pottery.[314] The interpretation of the distribution pattern of Grey Ware demands a more complex explanation, however, since bowls of this fabric are quite frequent in 7th century BC pottery assemblages in northern Syria and Assyria. Grey Ware ceramics are a typical example of Assyrian style pottery, popular in Syria and Palestine during the period of the Assyrian domination.

Fig. 6.7

This drawing is a sketch published by Woolley.[315] A closed vessel with a high neck and vertical handles attached to the shoulders. An example found in Al Mina Str. 6 was described as being a 'painted local amphora'.[316] However, there is no indication of paint on the published sketch.[317]

There are two groups of this form in Syria, one covered with a red slip[318] and one with a painted decoration.[319] Both types were found in contexts of the late 8th century BC. A vessel with painted decoration was found in the destruction level of Hama Str. E, apparently destroyed by Sargon II in 720 BC.

The type with red slip has been found in several sites in Syria: Afis D Str. 4, L494;[320] Carchemish, Yunus cemetery tomb YB 47;[321] Carchemish, Yunus cemetery;[322] Qatna, Sondage des Tirailleurs;[323] Tall ar-Rashaydiya tombs ABC.[324]

Comparisons for the type with painted decoration were found in: Carchemish, Yunus cemetery tomb YB 83;[325] Hama Str. E Batiment 1;[326] Hama cemetery IV, type 1 a6.[327]

Pottery of Al Mina Str. 5–6 and Str. 5

Fig. 7.1, 3, 8

While red slipped bowls and fine wares continue from Al Mina Str. 6 into Str. 5, increasingly new pottery forms and styles of decoration appear in Al Mina Str. 5, which resemble Greek traditions. The red slipped, fine levigated bowl **Fig. 7.3** is marked [Str.] 5–6.[328] It represents a continuation of earlier Phoenician pottery traditions. The type occurs from the beginning to the end of the 7th century BC. The bowl is related to earlier forms, the carination of which is much closer to the base.[329] Another type that continued from earlier traditions is the bowl with a red slip and an incurved rim (cf. **Fig. 3.3** and **6.3**). One example, MNP 513, was found in Al Mina Str. 5.[330] Parallels in Tel Kabri date these latest examples of the Phoenician red slip tradition to the end of the 7th century BC.[331]

There are no parallels for bowl **Fig. 7.1**, but the stepped or grooved base is not rare in the 7th century BC. The very flat form and its thick rim point on to new traditions, which became more popular during the 6th century BC.

The bowl **Fig. 7.2** seems to reflect earlier Iron Age traditions. The vessel is today in the Institute of Archaeology, London (no. 55.1065). It is plain, not slipped and decorated with bands and strokes of dark paint on the interior, exterior and on the rim. None of the comparisons listed here is really identical to the Al Mina bowl. There are vessels with similarities from the early 7th century BC until the Hellenistic period: Tall ʿArqa Str. 9AB, A 20.40;[332] Tall ʿArqa Str. 10AB, B 20.42;[333] Tall ʿArqa, Hellenistic;[334] Tall Keisan Str. 5;[335] Tyre Str. 2 Area 8.[336]

The vessel **Fig. 7.8** seems to be related to a particular type of presentation stand usually with high pedestal base.[337] When Patricia Bikai published a chalice of this type for the first time,[338] it seemed to be somewhat odd and rare. Since then this kind of vessel has turned up more often in excavations in northern Palestine and was also identified among so far unpublished pottery from Al Mina (BM GR 1968.3-25.12).[339] The type is not one of the most frequent, but apparently one of the most characteristic pottery forms of the late Iron Age in coastal, or Phoenician, assemblages. It has been found mostly in contexts of the 7th century BC, but may have occurred earlier.[340]

A variation of this type with two different tones of brown slip and incised decoration, similar to Conrad's 'Akko Ware',[341] was found in Al Mina Str. 8 and is today in Oxford (Ashmolean 1954.348/3). This type occurs also in stone, where the chalice is clearly formed as a flower.[342] In Cyprus it was found in the Kition Horizon, *c.* 750–680 BC.[343]

Comparisons: Amathus tomb 367/51–1;[344] Dor A phase 9;[345]Dor C2 phase 7;[346] Tel Kabri Str. 2;[347] Tall Keisan Str. 4–5;[348] Qiri Str. VI (*c.* 710–650 BC);[349] Sarepta;[350] Sarepta;[351] Yoqne'am Str. 10 (*c.* 800–750 BC).[352]

Fig. 7.9

The bowl **Fig. 7.9** is probably a north Syrian type and not typical for Phoenician assemblages. It has a large thickened rim which is hollow inside and has a painted decoration on its top. The vessel is red slipped and has a bar handle with grooves at the exterior of the rim. A very similar bowl was found in the ʿAmuq plain, in Tayinat, and is now in the Oriental Institute Museum, Chicago. A date in the second half the 7th century BC for this vessel is confirmed by the well-stratified parallel from Tell Tayinat. Although with a different rim, a bowl from Tell Batash Str. I has a similar decoration and general form.[353]

Fig. 7.4–7

A number of bowls of a fine fabric seem to reflect Mediterranean, probably Greek influence. These bowls are mostly shallow and wide. They often have a bichrome band-like decoration with concentric red and black bands and lines. Their fabric is very finely levigated and usually of orange or pink appearance. So far there are no chemical analyses of the respective fabrics and it is impossible to determine the exact provenance of these different types.

A number of bowls found in Al Mina Str. 5 and Str. 5–6 represent a type of a shallow bowl (**Fig. 7.4**), which was so far known only from Athlit in Palestine (tomb L24)[354]. It has a relatively thick rim, a carination inside the bowl and red orange paint (10R5/8) and black bands. The fabric is pink (5YR7/4) and the core light red (2.5YR6/6). A similar bowl was found in Italy and is in Oxford today (Ashmolean 1879.125 'from Italy', the

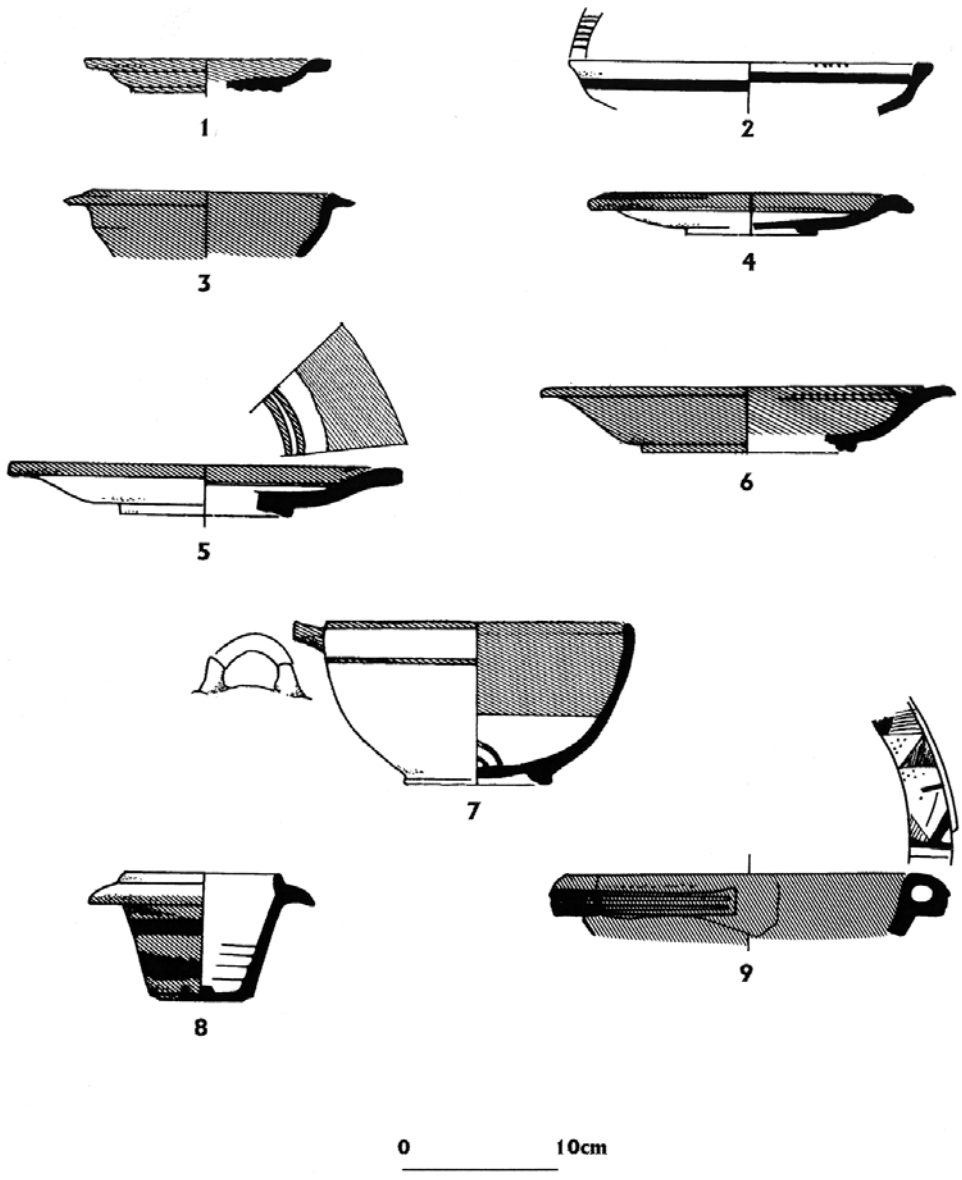

Figure 7 Pottery from Al Mina Str. 5 and 5–6

exact provenience is unknown). So far a considerable number of bowls of this type were found in Al Mina [IAL = Institute of Archaeology, London; BM = British Museum]:

Str. 5–6	IAL 55.1931
Str. 5–6	BM GR 1968.3-25.115[355]
Str. 5–6	BM GR 1995.12-24.1-4, 6 (five examples)
Str. 5	IAL without Reg.No.
Str. 5	BM GR 1968.3-25.117
Str. 5	IAL 55.1932
Str. 5	BM GR 1995.12-24.7-9 (three examples)

Thus, seven examples come from Al Mina Str. 5–6, while six more were found in Str. 5. One more example may come from Str. 5, MNP 139, a 'local plate, orange slip, dull brown painted lines', the whereabouts of which are unknown.[356]

Similar, but with a much thicker wall and a simple rim, is the shallow plate **Fig. 7.5**.[357] It was found in Al Mina Str. 5–6 and is now in London (Institute of Archaeology no. 55.1933). Colours and fabric, as well as the bichrome wide red and thin black concentric bands are identical to type **Fig. 7.4**. One more example, also from Al Mina Str. 5–6, has now been registered in the British Museum (GR 1995.12-24.5).

Fig. 7.6 is a wide bowl, not as shallow as the preceding ones.[358] It is covered with a red slip, has grooves inside and was found in Al Mina Str. 5–6 (BM GR 1968.3-25.100).

Similar, although not of exactly the same type as the preceding bowl, is an unstratified plate from Al Mina (Institute of Archaeology, London no. 55.1934).[359] Another example from Al Mina Str. 6–7 has now been registered in the British Museum (GR 1995.12-24.10). This bowl has a red slip only in the interior. A bowl of the same type was found at Ras al-Bassit Phase 7.[360] This type of bowl may be older than **Fig. 7.6** and probably belongs to Al Mina Str. 6.

The deep, one handled bowl **Fig. 7.7** (Ashmolean Museum 1989.570) anticipates the pottery traditions of the 6th century BC. It was found in Al Mina Str. 5 and is very similar to the bowls of the Persian period (cf. **Fig. 10.1–2**), but is considerably deeper than those. It may have been an intrusive find in Al Mina Str. 5, but it is also possible that this tradition, which reflects East Greek pottery, in fact started in Al Mina Str. 5. A similar deep bowl was found in Ras ash-Shamra, Ugarit, in the Persian levels.[361]

Fig. 8.1–2

Large bowls with a diameter of 29–39cm, called 'mortaria', are a

frequent type of Levantine pottery in Al Mina. After being once regarded as the *fossil directeur* of the Persian period, it is now evident that they appear first around 700 BC or even earlier.[362] The earliest examples were found in Tyre Str. 3,[363] Rosh Zayit area C[364] and Ashdod area D Str. 2.[365] One of the earliest examples of mortaria also occurred in one of the two shipwrecks recently found in deep waters off the coast of Israel.[366] The vessels became more popular during the 7th century BC.[367] In Tel Kabri the earliest examples were found in Str. E2b, dated to 660–644 BC.[368]

While most scholars believe that the vessels were used for grinding, Sapin[369] has suggested that the mortaria were in fact plates for cereal groats, which were triturated before consumption. Salles has proposed that they were measuring bowls for grain.[370]

It is possible to distinguish between earlier sub-types of the 7th and 6th centuries BC and later ones of the Persian period.[371] Petrographic research by Yuval Goren on a 7th century BC mortarium found at Tel Kabri has shown it originated in Cyprus.[372] While the distribution of mortaria in the Near East is now well documented, the vessels in Egypt, Cyprus and especially Greece have still to be studied in more detail. For a comprehensive discussion of 8th and 7th century BC mortaria with a list of vessels found in Palestine see Mazar and Panitz-Cohen[373] as well as Gal and Alexandre.[374]

Research on cooking pots and mortaria reveal an increasing influence of the Mediterranean cultures on the techniques of food processing in the coastal areas of the Ancient Near East during the 7th and 6th centuries BC. The complete replacement of traditional cooking pots and the introduction of mortaria point to a penetration of Mediterranean ways of cooking and eating even in rural areas of Syria, Lebanon and Palestine. This process of cultural change is of particular importance for the understanding of this period. It reflects an increasing integration of Syria and Palestine into the cultures and economies of the Mediterranean.

Two sub-types of early mortaria can be distinguished in Al Mina Str. 5. The type of **Fig. 8.1** is described by Woolley as a 'large bowl of coarse ware, pink clay and a white slip, with sets of reserved lines on interior' (unpublished Al Mina Pottery Catalogue 1936: nos MNP 140-141, 554 A-D, all Str. 5 [no. 554 C has now been registered at the British Museum as GR 1995.12-23.1]).[375] Thus, six mortaria of this type were already recorded in 1936, five more fragments are now registered at the British Museum (GR 1995.12-23.4-8). When did mortaria appear in Al Mina? Type **Fig. 8.1** is the earliest recorded type at the site. Of the 11 examples or fragments, 1 comes from Str. 6–7, 2 from Str. 5–6 and 7 from Str. 5. However, two of the fragments join to one vessel. One of the fragments is the one marked Str. 6–7, the other is marked Str. 5–6. Thus, it is possible that all fragments actually come from Str. 5, although at least the two joining fragments may come from Str. 6.

The same type of mortarium has been found elsewhere. One vessel was recorded in Salamis, where it was found on the surface. It is of 'reddish clay with horizontal white bands around the inner surface'.[376] Another example has now been found in the Persian levels at Beirut.[377]

The white reserved lines in the interior of the vessels may indicate that the mortaria found in Al Mina were on their way to be marketed, but never used. If they had already been used, the inner lines of the mortarium would have been grated off. This is what happened with the examples described by Sapin and Sayegh.[378] The horizontal reserved lines, interpreted here as wheel burnish, are removed at the center of the vessel by vertical traces of use.[379]

Comparisons: Beirut (010.135.14) (Persian period);[380] Salamis surface.[381]

The second sub-type (**Fig. 8.2**) is more frequent in the Levant than the first and has a number of well-stratified comparisons in Syria, Lebanon and Palestine.[382] The mortarium from Al Mina was drawn after a photograph and is probably MNP 556 (556A or 556B?) of the unpublished Al Mina Pottery Catalogue 1936, found in Al Mina Str. 5.

Fig. 8.3
Large jug with round body, a conical neck and concentric circles in red paint.[383] The handle, rising above the lip, is made of two strings of clay. The vessel is today in Oxford (Ashmolean Museum 1937.431) and was found in Al Mina Str. 5.

Comparisons: Tall al-Far'ah (North) Str.VIIe1;[384] Tall al-Far'ah (South) EQ Pit;[385] Tall Jemmeh;[386] Tall Keisan Str. 3b;[387] Ma'agan Michael ship wreck.[388]

Fig. 8.4
A large jug with a narrow neck and a small handle (MNP 502 of the unpublished Al Mina Pottery Catalogue 1936). The jug was found in Al Mina Str. 5 and is today in Oxford (Ashmolean 1937.920). The horizontal bands, typical for the 7th and 6th centuries BC are in black paint. Jugs with similar proportions, but with a different rim and a different painted decoration, were found in the Akko plain, in Tel Kabri Str. E2–E3[389] and Tall Keisan Str. 5.[390]

Comparison: Khan Shaykhun Ville 2.[391]

Fig. 8.5
Jugs or table amphoras with a whitened surface and a black painted decoration are typical for the Persian period, but apparently appeared already in the 6th century BC.[392] This fragment was found in Al Mina Str. 5 and is now in Oxford (Ashmolean Museum 1954.474). Four further examples of such vessels with vertical painted wave-lines and leaves were found at Al Mina, most of them in levels 4 and 5, belonging to a comparatively early variation in the typological group (for later vessels of this group see **Fig. 11.1–3**): Al Mina Str. 3, room N2 (unpublished sketch of Woolley): Al Mina Str. 4 (Ashmolean Museum 1954.473/12); Al Mina Str. 5 (Ashmolean Museum 1954.474) (**Fig. 8.5**); Al Mina Str. 5–6 (Ashmolean Museum 1954.473/03).

Only a few stratified comparisons have been found,[393] they include: Tall Sukas *Fundgruppe* 57 Phase E;[394] Tel Michal Str. 11.[395]

Saucer lamps (**Fig. 8.6**), with a connection to stick them on a stand or some kind of other installation, are rather rare. This example has a broken rim at the back of the vessel. It was found in Al Mina Str. 5 and is today in London (British Museum GR 1960.3-1.13). There are only a few comparisons: Byblos (unstratified);[396] Sarepta II-A/B-4 3-1.[397]

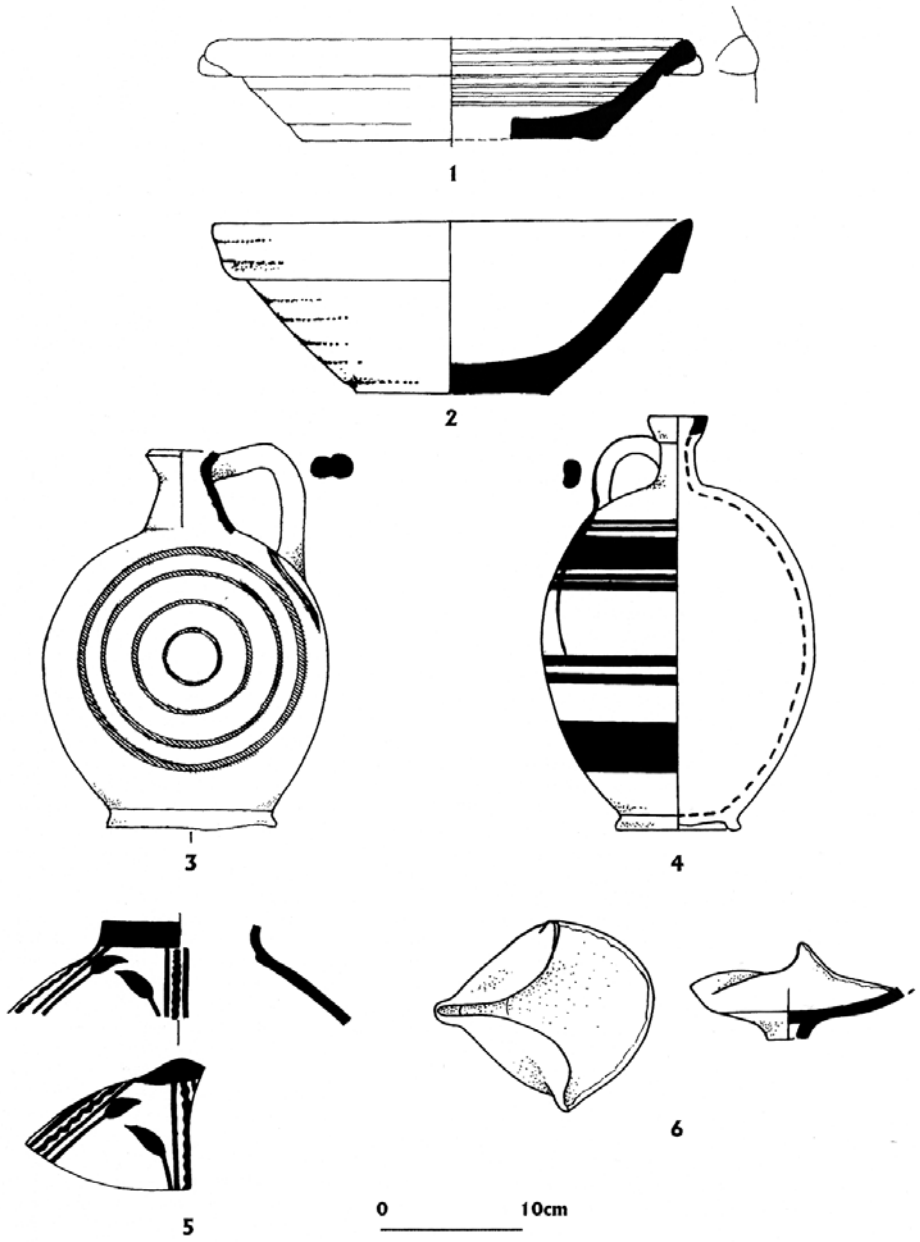

Figure 8 Pottery from Al Mina Str. 5 and 5–6

Fig. 9.1–2

As already mentioned, there is not sufficient data on transport jars in Al Mina and only a handful of drawings, more correctly sketches, and photographs are available. This is surprising, since there should have been many transport jars in a port such as Al Mina. Indeed, there are enough references to such vessels in the notes of Woolley to conclude that he did consider transport jars as an important find. Apparently he discarded most of them. This is regrettable, since an advanced typology of transport jars and cooking pots is now available. Furthermore, these vessels are instrumental in dating the development of Syrian and Phoenician pottery. Thus important information is lacking to date the Al Mina pottery assemblages and to investigate the international connections and the kind of trade which took place in Al Mina.

The sketches published by Woolley[398] are imprecise and difficult to use. Most probably **Fig. 9.1** represents the ubiquitous transport jars of orange fabric, which appear in many sites of the 7th century BC in Syria and Palestine.[399] This transport jar has slightly sloping shoulders, vertical body walls under the shoulder carination and a pointed base. There is a regular, a small and a large sub-type. The fabric is orange pink (5YR8/3 outside) in several variations (i.e. 5YR7/6, 10YR8/4 or 2.5R6/6). The matrix is fine with a fine to medium mineral temper. In Tyre this type, SJ-2, occurred in Str. 1.[400] In Sarepta it was found in Str. B-C1.[401] The type dates in Tel Kabri to Str. E2.[402] In all three sites, Tyre, Sarepta and Kabri, this is the most frequent transport jar of its time.

In the past, this type was frequently confused with the later Persian transport-jar.[403] However, it is not difficult to distinguish the two types. The earlier type of the 7th century BC is larger, the shoulders are sloping and are wider than the later one of the Persian period, and the handles are never twisted. In contrast, the Persian period type usually has almost horizontal, short shoulders and the handles are very often twisted.

That the early type of the 7th century BC, Lehmann's type 390–392,[404] reached the port of Al Mina is almost certain, because an unpublished transport jar of this type was found in Tayinat and is today at the Oriental Institute Museum of the University of Chicago. Al Mina was the harbour of Tayinat and vessels of this type must have passed the port on their way to Tayinat. The example from Tayinat is stratified and confirms a

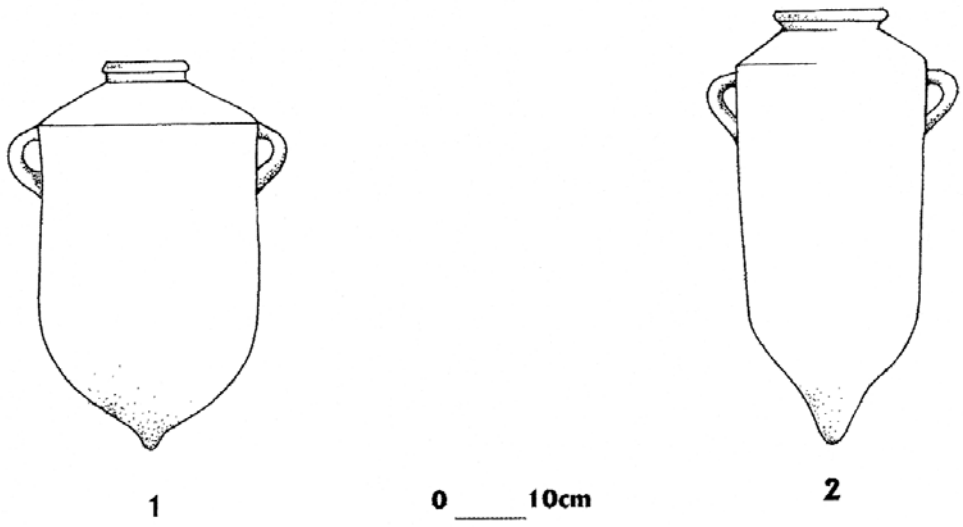

Figure 9 Pottery from Al Mina Str. 5 and 5–6

late 7th century BC date for this type of transport jar.

Woolley's sketch drawing of the type is problematic. The drawing has clearly a raised neck with an accentuated rim. These features do not often occur with such transport jars. However, there are unpublished vessels of this type at Tel Kabri, which have this type of neck and rim (Kabri 93/1984/5491-1 and 93/1923/5153-1 both Kabri Str. E2b). Thus, it is possible that the imprecise sketch of Woolley[405] indeed represents Lehmann's type 390–392.

Comparisons: Akhziv Str. IV;[406] from the sea;[407] Tel Kabri Str. E2;[408] Tall Keisan Str. 4;[409] Tyre Str. 1.[410]

In Assyria a number of amphoras of this type made of alabaster were found:

Nimrud: Northwest Palace room 25, ND3555, alabaster, today in the Metropolitan Museum New York;[411]

Assur: Alter Palast,[412] height 55cm, diameter 31cm. There is an Egyptian hieroglyphic inscription written on the amphora. In addition, there are three lines of an Assyrian cuneiform inscription and an incised representation of a lion on the vessel. According to the Assyrian inscription, the amphora is a *nahbasu*-vessel, which was filled with royal oil and taken as booty from the palace treasury of king Abdimilkuti in Sidon by Esarhaddon.

It is more difficult to identify the type of Woolley's second sketch.[413] Woolley noted that in 'squares D6 and C7 there were groups of big amphorae' and mentions this type among them.[414] None of the many transport jars published from contemporary levels of other sites in the Levant match Woolley's sketch and the type remains enigmatic.

Pottery of Al Mina Str. 3–4

There is less controversy about Greek influence in the Ancient Near East during the Persian period. Historical sources are numerous and well studied, and so is the chronology. Historical research seemed to have covered and explained the Persian period so profoundly that it was implicitly assumed that the material culture of this period has nothing significant to add. As a result, the pottery of this period found less attention in archaeological research than the ceramics of the preceding levels. But this is not the case. In many aspects, such as trade and social history, archaeology offers an important contribution to this period.[415] Archaeology usually does not reflect a history of single and specific events, it is able to shed some light on historical processes in the middle range dimension of Bridle's *histoire conjecturale*, or structural history, which is often not visible or mentioned in the historical record.[416]

Al Mina Str. 3 and 4 are safely dated to the Persian period. Coins date the destruction of Al Mina Str. 3 to about 380/375 BC. The conflagration may be a result of the revolt of Euagoras I.[417] A significant sample of stratified pottery of the Persian period was found at Al Mina, which was almost completely neglected by previous archaeological research.

Fig. 10.1–7, Fig. 11.1–4

Among the few non-Attic fine vessels of the Persian period there is a group which I propose to call 'Band-Decorated' pottery,[418] which successfully competed with the ubiquitous Attic imports in the Levant.[419] This pottery has been attributed to East Greece because a 'potter's mark' on one of the bowls from Mersin also occurred on a low-footed Ionian cup with red bands added.[420]

Some years ago I suggested that the 'Band-Decorated' pottery forms one consistent group.[421] Recent scientific analyses by Ashton and Hughes (this volume) of these vessels both confirmed and, to some extent, contradicted this view. I had originally assumed that the group consists of a complete set of cups, kraters and table amphoras which probably served as a set for wine drinking. I thus concluded that the group may reflect drinking customs during the Persian period. Among the typical forms I counted also small bottles and jugs, as well as stamnoi.[422] This picture has to be corrected. The study by Ashton and Hughes showed that two bowls analysed in the British Museum are in fact imports. The two bowls examined were, however, each of a different chemical composition. One was Ashton and Hughes' import group B (from Miletus or its region), the other was somewhat 'between' import group B (Miletus) and C (Ionia?). Raban mentioned another, but unpublished, analysis of a krater and a stamnos. Both 'seem to have a rather similar chemical profile'.[423]

Contra my previous views, the 'Band-Decorated' cups are

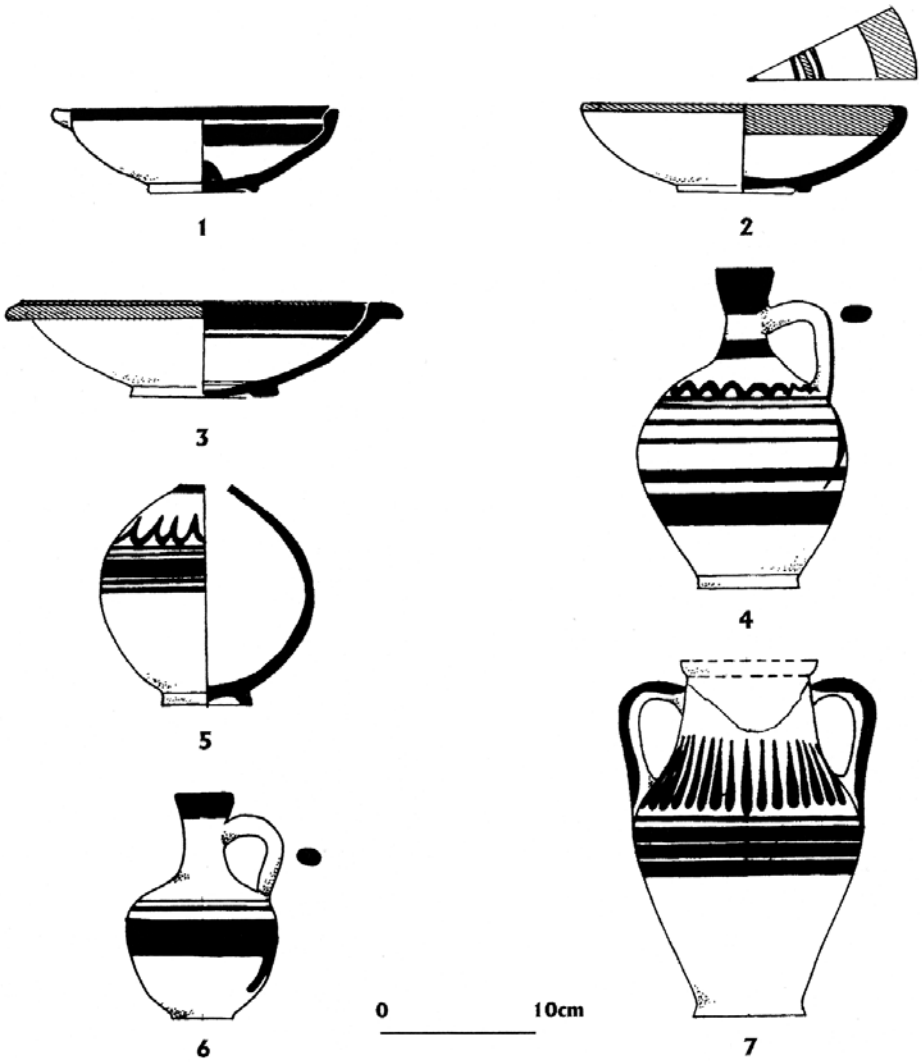

Figure 10 Pottery from Al Mina Str. 3–4

apparently an East Greek import that may go back to an older type of cup that is well represented in the Near East.[424] That earlier type is characterised by a thin wall with a sharp carinated lip. The interior and the exterior surface are never completely black glazed. This form has been called 'Rhodian Black-Glazed Cup Type 5' and was dated 620–565 BC.[425] Villard and Vallet labeled the form type B1 and dated it to 620–580 BC.[426] It is Isler's type E[427] and Furtwängler's 'Schalengruppe 6', dated to 620–580 BC.[428] The Cypriot examples were called 'East Greek Skyphos Group 2'.[429] The cup may well have served as a model for the 'Band-Decorated' cups. However, the walls of the 'Band-Decorated' cups are much thicker and the paint has never the quality of glaze. The clay of the 'Band-Decorated' cups has a fine appearance, but is generally less well tempered than the earlier cup.

'Band-Decorated' cups were found in Al Mina with different rim forms (**Fig. 10.1–3**). The earliest 'Band-Decorated' bowls appeared in Al Mina Str. 5–6, but belong probably to Str. 5. If this assumption is correct the cups occur in Al Mina Str. 2–5. The cups have a wide distribution in the Levant during the Persian period.[430]

While 'Band-Decorated' cups were an import, the study by Ashton and Hughes showed that jugs, juglets, table amphoras and some of the kraters with Band-Painted decoration are made of a local fabric. In Al Mina, most of the jugs and juglets were found in the destruction level of Str. 3 (**Fig. 10.4–6**).[431] Table amphoras appeared in levels Al Mina Str. 3–5, the majority in Str. 3–4. For the distribution of this very frequent type of the Persian period see Lehmann.[432] A typical krater (**Fig. 11.4**) was found in Al Mina Str. 3 and there are many comparisons at Akko, Judayda, Mersin and Ras ash-Shamra (Ugarit) of such kraters.[433]

From a macroscopic point of view, the fabric of the 'Band-Decorated' pottery, both imported and local, looks very similar. The clay is fine tempered and the surface usually smoothed. The colour of the clay varies from Munsell 2.5YR5/6, 5YR7/4-6, 5YR8/3, 7.5YR7/4-6, 7.5YR6/6-8, 7.5YR8/4, 10YR8/2-3 in Al Mina, 7.5YR7/4, 10YR7/3, 10YR8/2-4 in Judayda (ʿAmuq-Plain) and 2.5YR6/6-8, 2.5Y7/2-4, 5YR6/6, 5YR7/4, 10YR7/4 in Akko.[434] The main elements of decoration are horizontally painted bands, while additional wavy lines may be applied. There are two colours of paint: black or red; the paint is matt and never lustrous. The colour of the red paint in Al Mina is Munsell 2.5YR4/6-8, 2.5YR5/7, 2.5YR6/8, 10R4/6-8, 10R5/8 and in Judayda 5YR4/3, 10R4/2, 10YR4/8.

On table amphoras and jugs there is sometimes a pattern of paint-drops which are placed in a fine wave-line close to each other. These drop-lines are in some cases set on a white slip as a background. There are also motifs of plants and vertical lines which are applied by letting paint run down the vessel surface. The handles are usually painted.

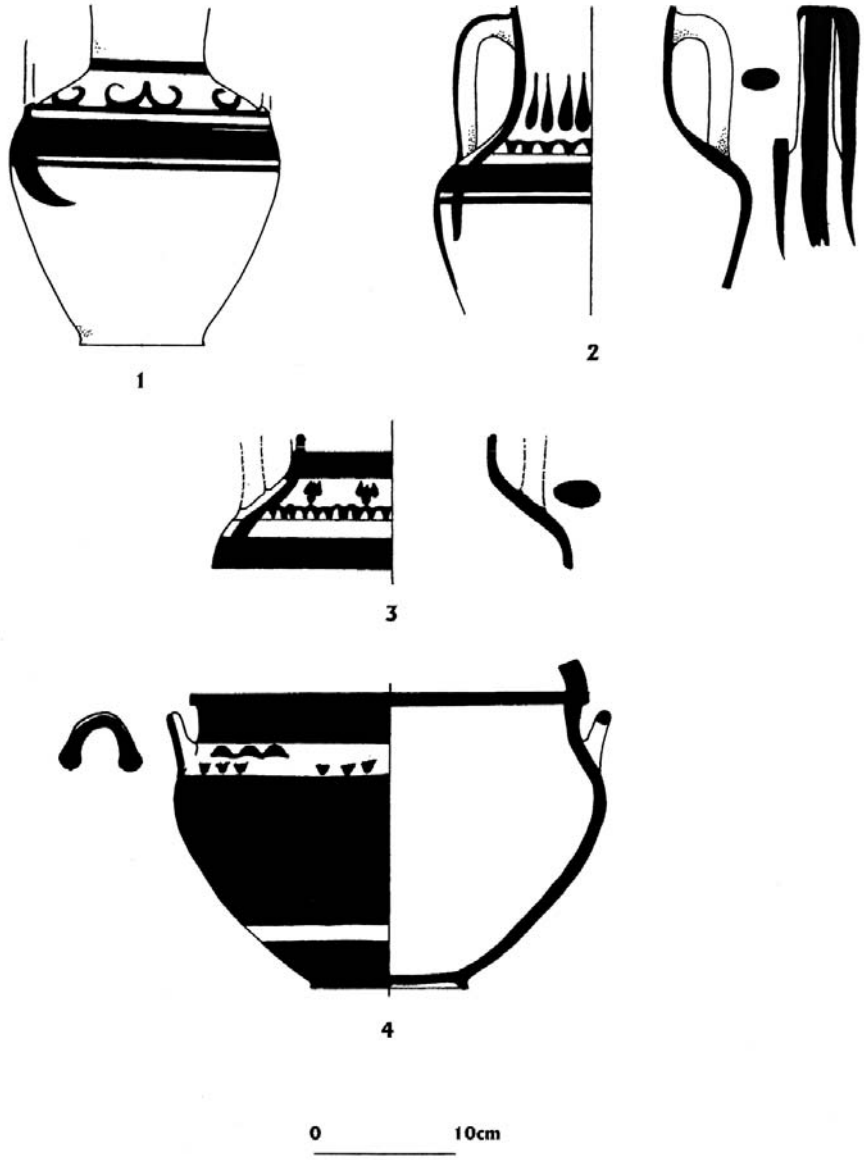

Figure 11 Pottery from Al Mina Str. 3–4

Many more fragments of 'Band-Decorated' pottery found at Al Mina have now been registered at the British Museum (GR 1995.12-25.1-61, GR 1995.12-26.6, 8-9, 11, 21-22, 25-27, 39, 68-69).

Fig. 12.1–6

Among the very few examples of red slipped fine wares in the Persian period is the shallow bowl on **Fig. 12.1**. It is slipped in two different tones of red slip, which is unusual in Phoenician red slip tradition.

Juglets, whose upper parts have been dipped into dark paint, are a very frequent phenomenon in the Persian period.[435] While such juglets are so far mostly found in Syria and Palestine, some occurred also at Miletus in the 6th and 5th century BC.[436] This particular juglet (**Fig. 12.2**) is not stratified and has been redrawn after a photograph; the unpublished Al Mina pottery catalogue of the 1936 season lists such vessels as being found in Al Mina Str. 3 (i.e. MNP 400).

Flat saucer lamps, with a triangular appearance as seen from above, are another typical pottery feature of the Persian period (**Fig. 12.3**). Again there are a large number of parallels.[437] This lamp was found in Al Mina Str. 3 and is today in London (British Museum GR 1960.3-1.14). In Sarepta the type of lamp occurs mainly in Str. C1–B.[438]

Mortaria with high ring bases (**Fig. 12.4**) are one of the most typical vessels of the Persian period in the Levant.[439] This particular form with an elevated ring base is the typical later Persian period form of mortarium. The mortarium here is marked as being from Al Mina Str. 5, which constitutes a problem. Such a type should not occur before Al Mina Str. 4. The mortarium, which is today in Oxford (Ashmolean Museum 1937.923), may have been wrongly marked. But since there are also cases of 'Band-Decorated' pottery in Al Mina Str. 5, one has to consider the possibility that at least parts of the Str. 5 pottery assemblage overlaps with pottery types conventionally dated to the Persian period.

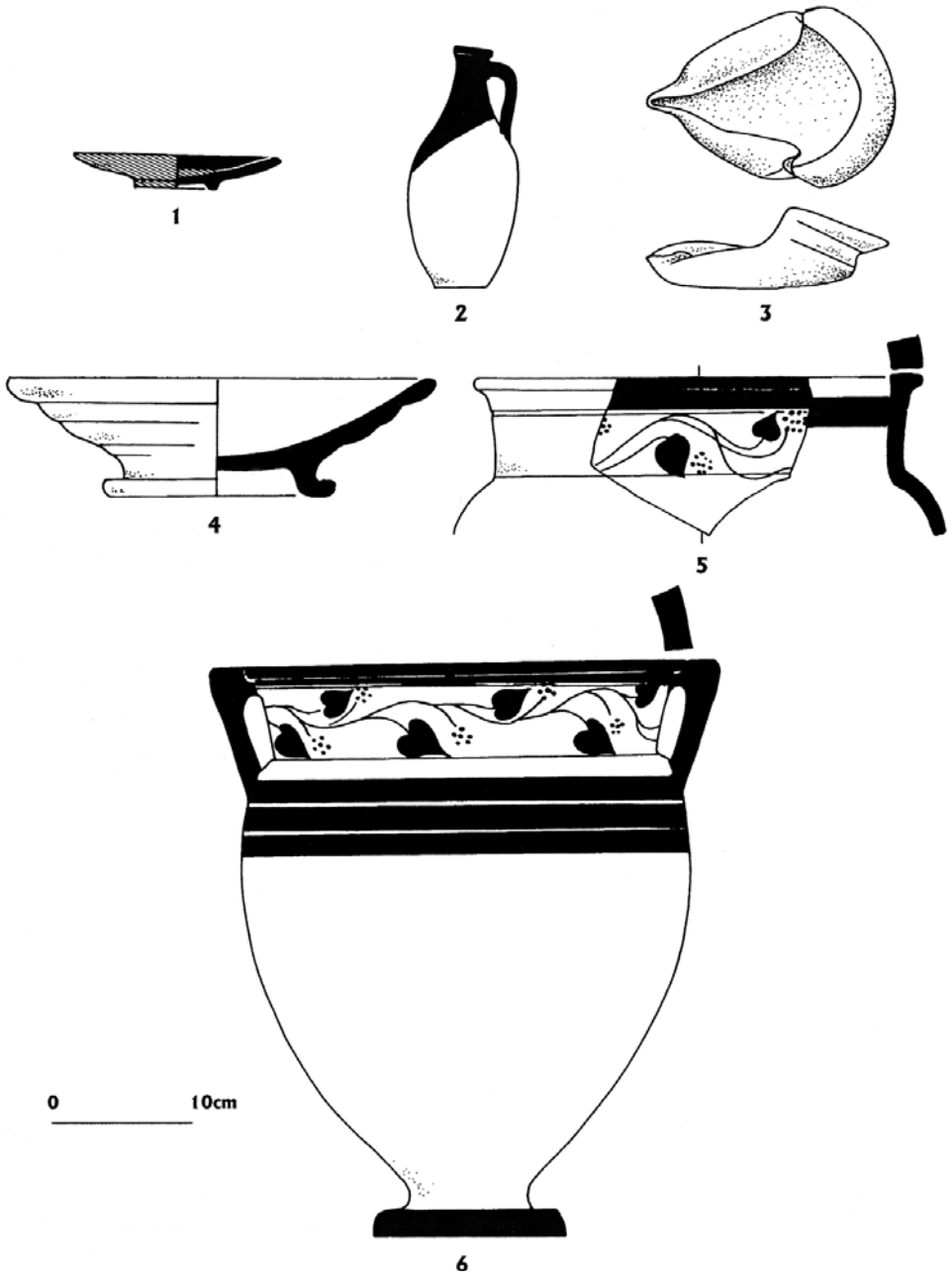

Figure 12 Pottery from Al Mina Str. 3–4

Kraters with ivy leaf motifs in black lustrous paint on a light ground are imitations of Attic column-kraters (**Fig. 12.5–6**). The first krater is unstratified and today in Oxford (Ashmolean Museum 1954.484), the second one was published by Woolley[440] and was found in Al Mina Str. 2-3. Many more fragments are registered now at the British Museum (i.e. GR 1996.1-6.1-2, 4-6, 8-11, 15, 17, 23, 25, 28-32). This group of pottery often takes the form of column- and bell-kraters. It has been completely neglected by previous research. A scientific analysis of the fabric of this group by Sally-Ann Ashton and Michael Hughes (this volume, group 4) showed that this group was imported. This corrects my statement in a previous publication, where I assumed that the group was a local production.[441] The analysis by Ashton and Hughes assigned these vessels to the import group B and suggests that this fabric was produced in or near Miletus.

Comparisons: Apollonia-Tel Arshaf, Israel;[442] Judayda, ʿAmuq plain, unpublished, Oriental Institute Museum, University of Chicago; Judayda, ʿAmuq plain, without further stratigraphical information;[443] Mersin, intrusion of the Persian period in Str. III;[444] Ras al-Bassit surface;[445] Ras ash-Shamra (Ugarit);[446] Tall Sukas Phase F;[447] Tall Sukas Habitation Quarters, Period E.[448]

Fig. 13.1–3

As already pointed out in the remarks concerning **Fig. 8.1–2**, there is a completely new tradition of cooking pots and other ceramics used for food processing. This seems to be a significant change in daily behaviour in the Levant. Mediterranean lifestyle now influenced traditional and conservative habits in the Ancient Near East such as food consumption.

Woolley has left only a few sketches of the cooking pots of Al Mina Str. 3–4. Those illustrated here are from such drawings in

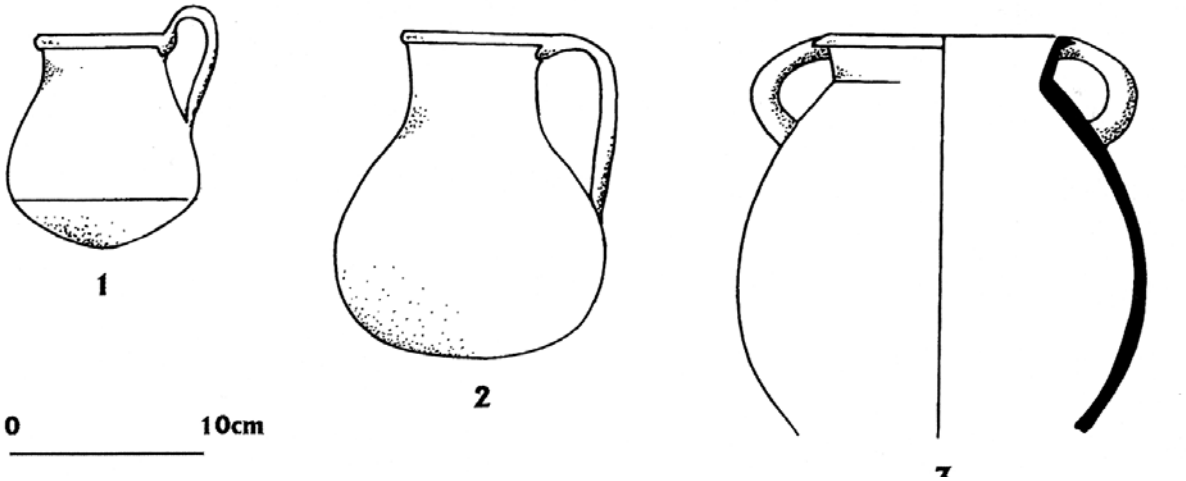

Figure 13 Pottery from Al Mina Str. 3–4

the unpublished pottery catalogue of the 1937 season (MP 44 and 43), **Fig. 13.1** and **2** are both found in Al Mina Str. 3.[449] A vessel of the type **Fig. 13.1** was found in Ras ash-Shamra (Ugarit) containing a coin hoard dated to the years 510–500 BC.[450] The cooking pot **Fig. 13.3** is redrawn after a sketch in the field notes. It is not stratified, but represents the most frequent type of cooking pot during the Persian period with dozens of well stratified examples.[451] This type seems to appear first in the 6th century BC, replacing the earlier Iron Age cooking pot traditions. In the Persian period the walls of this type are usually smooth; only in the Hellenistic period the walls are increasingly ribbed.

Fig. 14.1–3

As is the case for the cooking pots, there are only type sketches of transport jars. **Fig. 14.1** is most probably the ubiquitous transport jar type of the Persian period, Lehmann's type 394–396.[452] However, due to the imprecise sketch, it could also be a specific type found in several examples in northern Israel, in the Akko plain.[453] But it would be very surprising if jar type Lehmann 394–396 was absent from Al Mina. Woolley reports examples of his sketched type throughout Al Mina Str. 3–5, with most examples from Str. 3–4.[454]

The Basket-Handle amphora is of a common sub-type,[455] which is very frequent in the Persian period. The examples at Al Mina were found in Str. 3.[456]

The transport jar **Fig. 14.3** is also a type frequently found in the Persian period.[457] In Al Mina it appeared in Str. 2–3, with most jars found in Str. 3.[458]

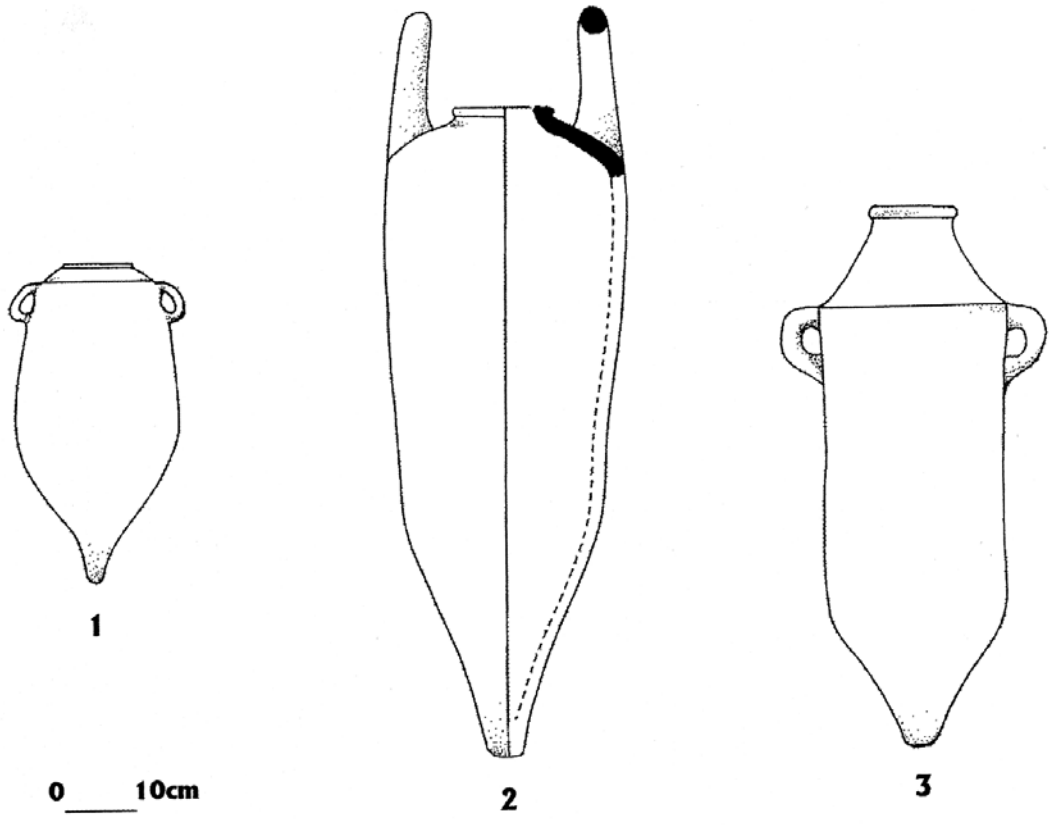

Figure 14 Pottery from Al Mina Str. 3–4

Conclusions

The 40 years after Taylor's study in 1959 have yielded considerable progress in the study of Phoenician and Syrian pottery. Since her study a number of excavations have been published that shed new light on the finds from Al Mina (cf. the comparative stratigraphy given in **Fig. 24**). The excavations at Phoenician sites such as Tyre and Sarepta by Patricia Bikai and William Anderson are probably most important, as well as the French excavations at Tall Keisan and the Israeli expedition to Tel Kabri. Tyre and Sarepta both provide a continuous stratigraphy through the Iron Age into the 7th century BC. In addition, the diagnostic pottery found was counted and provides a statistical outline of the stratigraphical frequencies of each type. At Tel Kabri two destruction levels of the 7th century BC, one around 650 BC, probably 644 BC, and the second one probably at 604 BC, provide chronological 'anchors'. For inland Syria the research of Stefania Mazzoni offers essential new data, especially her excavations at Tall Afis. Research on the destruction levels at Tell Rifa'at and Hama Str. E, caused by Assyrians between 738 and 720 BC, furnishes us with an important chronological point of reference. Some important data, however, is still not available, 60 years after their completion, and the American excavations in the 'Amuq plain are still unpublished.[459]

There is not enough evidence from Al Mina Str. 9 and 10 for a thorough comparison with other sites; the few comparisons seem to place Al Mina Str. 9 into the late 9th century or early 8th century BC. Only Str. 3 through 8 have yielded a sufficient quantity of Syrian and Phoenician pottery. In the following observations, only Syrian and Phoenician pottery is included, disregarding all Greek and Cypriot imports.

This paper begins by analysing the continuations and disruptions in the Syrian and Phoenician pottery traditions at Al Mina. The numbers in **Fig. 15** present the total number of Syrian and Phoenician types which were available for this research, how many of these types continued into the next stratum and how many new types appeared in each stratum. The numbers may be not representative of the original pottery repertoire, but there is no control as to how many types of Syrian and Phoenician pottery were actually found, kept or discarded by the excavator. Woolley probably considered only the decorated pottery worth keeping; the records did not include most of the cooking pots, storage and transport jars. Thus there is a severe distortion. Without any additional information to hand, one has to use the available numbers carefully, remaining conscious of their shortcomings.

The numbers available point to a limited continuity between Al Mina Str. 8 and 7: only 38% of the types continue, while 45% are new in Str. 7 (**Fig. 15**). There is significant continuity between Al Mina Str. 7 and 6: 68% of the types continue, although there are also 50% new types in Str. 6. In contrast to the pottery traditions, there is a new plan of the settlement that

Figure 15 Continuations and discontinuations between Al Mina levels

	types found in level	types continuing into next level		new types in level	
Str. 8	45	17	38%		
Str. 7	31	21	68%	14	45%
Str. 6	44	16	36%	22	50%
Str. 5	26	2	8%	10	38%
Str. 4	18	10	56%	16	89%
Str. 3	38	6	16%	27	71%

Figure 16 Continuations and discontinuations between Al Mina Levels, considering inland and coastal pottery types

	types found in level		types continuing into next level			new types in level		
Str. 8	coastal	30	coastal	12	40%			
	inland	8	inland	1	12%			
Str. 7	coastal	21	coastal	14	67%	coastal	9	43%
	inland	1	inland	1	100%	inland	-	
Str. 6	coastal	27	coastal	8	30%	coastal	12	45%
	inland	8	inland	3	38%	inland	7	88%
Str. 5	coastal	17	coastal	2	12%	coastal	9	53%
	inland	3	inland	-		inland	-	

replaced the outlines of Str 8 and 7.

Continuity between Al Mina Str. 6 and 5 is limited, with 36% continuing types and 38% new ones. But there is no clear cut architectural break between Str 6 and 5, rather an organic development. A significant break took place between Str 5 and 4: only 8% of the types continue and 89% are new types. A gap is also assumed on the basis of stratigraphical observations.[460] Continuation characterises the relationship between Al Mina Str 4 and 3, with 56% of types continuing. The relatively large number of new types in Al Mina Str. 3, 71%, is due to the fact that Str. 3 was destroyed and thus yielded more identifiable types than Str. 4.

While there seem to be stratigraphical breaks between Al Mina Str. 7 and 6, as well as between Str. 5 and 4, the architecture is orientated in all these levels in the same directions. And even between levels 7 and 6 as well as 5 and 4 there are cases of walls, even rooms which continue at the same spot into the next stratum.

Checking these numbers for the relationship between Syrian inland and coastal (Phoenician) types, it appears that the majority of the pottery types are of coastal, or Phoenician, origin (**Fig. 16**). Again, this might be due to the selection Woolley applied to the material, keeping mostly the decorated Phoenician wares and discarding local Syrian undecorated kitchen ware. If the numbers were representative for the assemblage of Phoenician and Syrian pottery, they would clearly indicate a preference for Phoenician pottery at the harbour of Al Mina.

If reliable, the numbers would also point to a continuity of Phoenician pottery between Al Mina Str. 8 and 7, while the local Syrian pottery gives evidence for discontinuity. These numbers would further support the hypothesis that the local Syrian pottery production underwent significant changes after the Assyrian conquest, whereas Phoenician production continued and flourished.[461] The discontinuity of Phoenician fine wares between Str. 6 and 5 supports the observation that Greek fine wares are increasingly replacing the Phoenician pottery.

Counting the comparisons of types found in levels of Al Mina and in levels of other contemporary sites provides the necessary data for establishing the relative chronology of Al Mina (**Fig. 17 see over**). In the columns the number of comparisons between Al Mina and each level of the other sites are listed. A grey field indicates the levels which best correspond to the respective stratum at Al Mina and it is assumed that these levels were contemporary.

In addition to these comparisons, Bikai and Anderson[462] provide statistics of the stratigraphical distribution of their pottery from Tyre, Cyprus and Sarepta (for a detailed discussion of the relationship of these statistics with Al Mina pottery types

Figure 17 Number of stratified comparisons found in other sites (in grey the level that corresponds best with the respective level at Al Mina)

Al Mina Str.	8	7	6	5
Abu Danna IId/A6	5	4	4	3
Abu Danna IIc/A5	2	1	1	1
Afis area D Str. 2	4	3	4	4
Afis area D Str. 3	1	2	2	2
Afis area D Str. 4	5	3	4	4
Hama Str. E	4			
Hazor Str. II				2
Hazor Str. III			4	
Keisan Str. 3b				2
Keisan Str. 4	5	4	8	5
Keisan Str. 5	15	6	7	1
Kition floor 3	11	3	5	
Mastuma Str. I	5	3	2	1
Ras al-Bassit phase 6	3		3	1
Ras al-Bassit phase 7	1	3	4	2
Tyre Str. 1	5	1	2	
Tyre Str. 2	9	7	10	1
Tyre Str. 3	10	7	8	
Tyre Str. 4	11	2	3	

see the pottery description above for each type). According to these statistics, Al Mina types found in Str. 9 have comparisons in the Salamis Horizon in Cyprus, *c.* 850–750 BC, and in Tyre Str. 6–9. Comparable pottery types to those from Al Mina Str. 8 have been found mostly in the Kition Horizon in Cyprus, *c.* 750–680 BC, in Tyre Str. 2–4 and in Sarepta Str. C1–C2. Pottery types from Al Mina Str. 7 have corresponding parallels in the Kition Horizon in Cyprus, *c.* 750–680 BC, as well as in the Amathus Horizon, *c.* 680–580 BC, and in Tyre Str. 2–3. Comparable pottery types to those from Al Mina types Str. 6–7 have been found in the Kition Horizon in Cyprus, *c.* 750–680 BC, in Sarepta Str. C1 and Tyre Str. 1–4.

As for the absolute chronology, this paper refers exclusively to Ancient Near Eastern records. Most probably the campaigns of Ashurnasirpal II (883–859 BC) and Shalmaneser III (858–824 BC) to Syria left their mark in the stratigraphical record of north Syrian sites. These campaigns in 876/875 and 857/853 BC may have caused some destruction layers in those sites. For Al Mina the finds and the stratigraphy of the nearby sites excavated by the University of Chicago in the ʿAmuq plain are of particular importance, since Al Mina was most probably part of this settlement pattern within the regional state in the ʿAmuq plain, Unqi or Pattina.

As the pottery of the Iron Age levels of the Chicago expedition to the ʿAmuq plain is still unpublished, one can draw only some general conclusions, based on the evidence so far published. It has to be stressed that one can understand Al Mina only in its territorial context. The site served as a harbour to its hinterland, the ʿAmuq plain. The port was only a station for the merchandise on its way to or from the Mediterranean. Whatever pottery was found at Al Mina is what broke and did not find its way to the markets it was destined for. Of course some pottery, such as the cooking pots, served the needs of the people living or staying at Al Mina. A parallel site excavated in Palestine is Tall Abu Hawam, a small harbour serving the trade of the Jezreel valley.[463] Al Mina and the ʿAmuq sites are tightly connected in their economic exchange and the political events in the area. Thus, the stratigraphy in both areas may be connected, too (**Fig. 18**).

In his unpublished dissertation, Swift[464] dated the ʿAmuq phases O a–d as follows: Oa = 950–900, Ob = 900–800, Oc = 800–725 and Od = 725–550.

In phases Ob–c Cypriot Black-on-Red III pottery was imported.[465] In phase Od Cypriot imports are said to be generally fewer than in the preceding periods Ob–c, in Od Cypriot Bichrome IV and Cypriot pottery of type V was found. Of particular importance is the Assyrian residency, Building IX, in Tayinat. The building was dated according to its architectural features and the previously known historical context to the end of the 8th and the early 7th century, Building Period 3, 720–680 BC.[466] The pottery found here was dated according to this assumed historical context for the building and not the other way round, the building according to the pottery. Under and on the floors of Building IX at Tayinat, Cypriot pottery was found. Gjerstad used this stratigraphical situation to date his Cypriot pottery of stages III and IV.[467] The pottery under the floors was dated type III, that on the floors type III–IV. The following discussion uses exclusively local, i.e. Syrian and Phoenician data, to analyse the dates of the ʿAmuq O phases and their comparison with the evidence from Al Mina.

The end of phase Ob may be connected, directly or indirectly, to one of the above mentioned Assyrian campaigns in 876/875 and/or 857/853 BC. The end of phase Oc may have been caused by another Assyrian intervention. These were either the campaigns of Tiglath-Pileser III or Sargon II, i.e. between 738 and 720 BC.[468] The levels of ʿAmuq phase Oc display signs of extensive destruction.[469] The available pottery comparisons between Al Mina and the ʿAmuq sites would equate the end of Al Mina Str. 8 with the end of ʿAmuq phase Oc. Levels Al Mina Str. 5–7 are all within the range of ʿAmuq phase Od.

As for an absolute date for Al Mina Str. 8, the comparisons with the pottery from the destruction levels of Tell Rifaʿat and Hama Str. E, dated to the campaigns of Tiglath-Pileser III against Arpad in 740 BC and of Sargon II in 720 BC, provide a date for the end of Al Mina Str. 8. In this context, the comparisons with Phoenician pottery, especially from Tyre and Sarepta, and Palestinian assemblages, mostly from Megiddo and Hazor with destruction levels caused by Tiglath-Pileser III, point to a date in the late 8th century BC. Al Mina Str. 8 should therefore be dated to the middle and second half of the 8th century BC. The destruction of Hama by Sargon II in 720 BC marks the end of the pottery assemblage that characterises Al Mina Str. 8.[470]

Al Mina Str. 5–6 are tightly connected to the pottery of Lehmann's Assemblages 3 and 4.[472] There are several well-dated *loci* with pottery groups in the Near East belonging to

Figure 18 Correlation of Al Mina levels and the ʿAmuq stratigraphy, based on Haines and Swift 1958

Date BC	Al Mina Strata	ʿAmuq Phases	Çatal Hüyük Area I	Judayda E-F 7-9	Tayinat Building Period	Swift(1958)
360–300	2	P	gap	Graves		
440–360	3			3		
540–440	4			4		
600–540	gap	Od	3	Graves	5	725–550
650–600	5			gap	4	
720–650	7-6			5	3	
850–720	8-10	Oc	4	6	2	800–725
900–850		Ob	5	7	1	900–800
950–900		Oa	6	8		950–900

Assemblage 4. In Tell Halaf *locus* 36, a Neo-Babylonian letter was found.[473] Texts found in Shaykh Hamad F2 are to be dated between 630 to 625 BC.[474] The destruction layer of Sultantepe contained cuneiform tablets, which date after *c.* 648 BC.[475] Pottery comparisons from Nimrud and Khirbet Qasrij, both in Iraq, date to the end of the 7th century BC.[476] In Palestine the destruction of many sites such as Mezad Hashavyahu, Tel Kabri Str. E2, Tel Dan or Ashkelon is dated to the campaign of Nebuchadnezzar II in 604 BC.[477] These Palestinian sites provide comparisons with the pottery from Al Mina Str. 5 and 6, the two levels should therefore be dated to *c.* 680/700 – 580 BC. Thus, Al Mina Str. 7 has to be somewhere between those levels and is most probably to be dated to *c.* 720–700/680 BC.

Al Mina Str. 4–3 were settlements during the Persian period. The pottery of Str. 4 dates to Lehmann's 'Assemblage 6', i.e. *c.* 540–440 BC.[478] The destruction of Al Mina Str. 3 can be dated with coin finds to about 380/375 BC. The conflagration may be a result of the revolt of Euagoras I.[479] Stratum 2 dates to the 4th century BC, the pottery of this level is contemporary with 'Assemblage 8' of Lehmann.[480]

The Syrian and Phoenician pottery found at Al Mina and other Syrian, Lebanese and Palestinian sites form a particular distribution pattern. Before outlining the position of Al Mina in this distribution pattern, one has to address the relationship of this Ancient Near Eastern pottery with the Greek pottery found at the site. The significant amount of Greek pottery at Al Mina has led to the assumption that a Greek *emporion* or Port of Trade was established by Euboeans in the 8th century BC.[481] Boardman noted that the proportion of Greek pottery at Al Mina might have exceeded 50%. 'But this can hardly be pressed. Although detailed comparisons would be unwise, it is overwhelmingly clear that at Al Mina and in its immediate hinterland the proportion of Greek to other pottery found is greater than that at Tarsus and all sites to the south'.[482]

From the data available today, recorded Greek diagnostic pottery exceeds the local pottery in every level between Al Mina Str. 5–10.[483] But as Boardman already noted, one has to be very careful with the available numbers, since no one knows how much undecorated pottery was discarded during the excavations. There is for example no evidence for Greek cooking pots in Al Mina Str. 5–10. As already noted, such pottery was found at Mezad Hasavyahu[484] and Tel Kabri,[485] and was interpreted by Niemeier as evidence for Greek residence at these sites.[486] However, there are north Syrian cooking pots in Al Mina Str. 8 as well as at least one Phoenician cooking pot, unfortunately unstratified, in the British Museum (GR 1995.12-27.88).[487]

The maps (**Figs 19–21**) illustrate the distribution pattern of Syrian and Phoenician pottery types found in Al Mina Str. 3–8 and their comparisons in other sites of Syria, Lebanon and northern Palestine. While the pottery of Al Mina Str. 7–8 has many parallels in northern Syria and is thus well connected to the pottery of the Aramaean states in this area, the majority of the types have comparisons in Tyre and its immediate hinterland. A cluster analysis of the pottery types found in Al Mina Str. 8 and their comparisons in other Syrian and Phoenician sites demonstrates this pattern even more clearly (**Fig. 22**). The closest parallels for Al Mina Str. 8 pottery were found in Tyre and its hinterland at sites such as Sarepta, Keisan, Tyre and the Tyrian city of Kition on Cyprus. Thus, there is

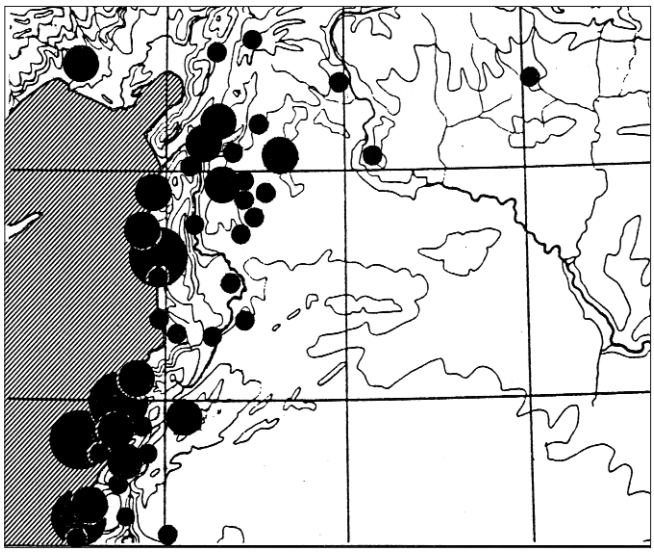

Figure 19 Distribution of Syrian and Phoenician pottery types found in Al Mina Str. 7–8 (end of 8th century BC)
Small dots: 1–5 types in common **Medium dots**: 6–10 types in common
Large dots: more than 11 types in common

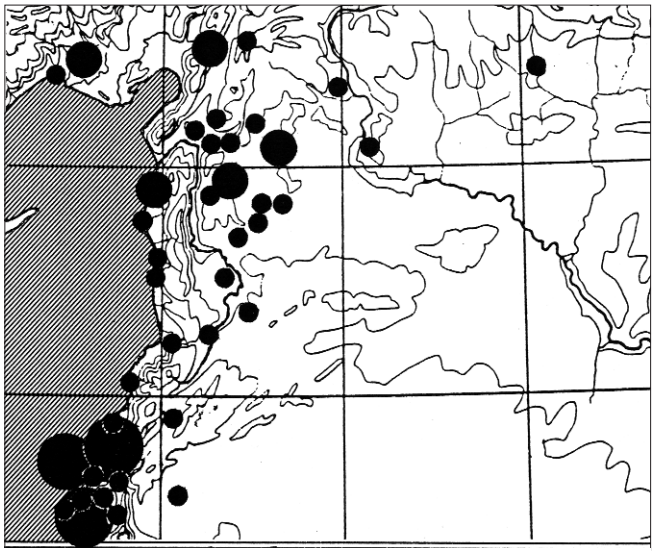

Figure 20 Distribution of Syrian and Phoenician pottery types found in Al Mina Str. 5–6 (c. 700–580 BC)
Small dots: 1–5 types in common **Medium dots**: 6–10 types in common
Large dots: more than 11 types in common

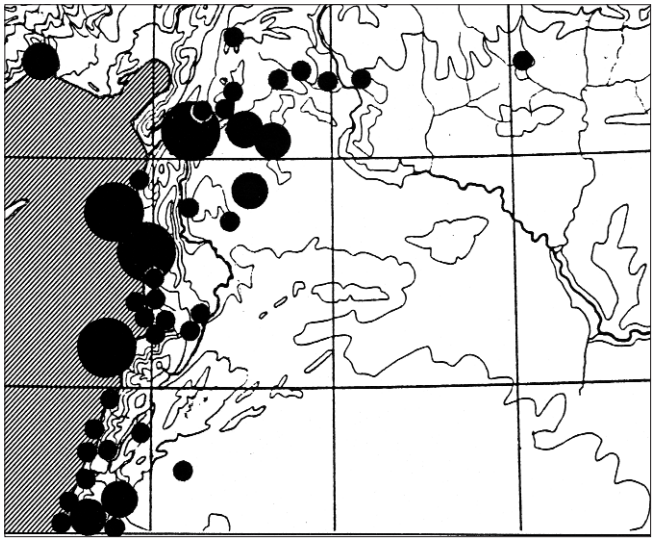

Figure 21 Distribution of Syrian and Phoenician pottery types found in Al Mina Str. 3–4 (c. 540–360 BC)
Small dots: 1–5 types in common **Medium dots**: 6–10 types in common
Large dots: more than 11 types in common

strong evidence for Phoenicians, more precisely for the city of Tyre at Al Mina Str. 8.

The Near Eastern evidence presented here points to a significant trade between Tyre and Al Mina Str. 8 and to an end for this stratum around 738/720 BC.[488] On the other hand, the data confirms Kearsley's scenario of overlapping trade networks of Phoenicians (i.e. Tyrians) and Greeks in the second half of the 8th century BC.[489] However, Taylor stated that the red slipped fabrics are not identical to the Phoenician pottery found in northern Israel.[490] Having worked with both Phoenician pottery from Al Mina and northern Israel (Tel Kabri, Tall Bira, Tall Abu Hawam and the Survey of the Hinterland of Akko), I cannot confirm her observations. From a macroscopic point of view, the pottery available to me seems to be Tyrian in shape and decoration. However, only future chemical analysis, currently under preparation, will provide a definite answer.

As of today, there is only one analysis of pottery fabrics available. It was conducted by Liddy,[491] using Atomic Absorption Spectroscopy (**Fig. 23**). Liddy noted first of all that the Red Slip samples from Al Mina form two very distinct clusters, 7/1 and 7/4 in his study. Apparently they are not from the same source. According to Liddy the products of two Red Slip manufacture centres were in use at Al Mina. But he was unable to identify the location of these sources. It is difficult to believe that this pottery was manufactured at a small specialised port of trade such as Al Mina itself.[492]

While this paper assumes a significant influence of Tyre on Al Mina, Liddy's data does not provide clear evidence for that assumption. Liddy compared pottery from Phoenicia and Al Mina for its provenience. Since his study is the first of its kind in this context, it seems to be worth discussing his results here in some detail. Unfortunately, Liddy never states which types of 'Red Slip' were analysed, nor in which levels the vessels were found. Using the inventory numbers of the Institute of Archaeology, London, it is possible to identify at least some of the types. For the samples from Tyre and Phoenicia, today in the Louvre, there is no further information as to which types were chosen for his study. Thus, it is difficult to assess the significance of Liddy's observations.

There is only one cluster, 8/2, which includes Red Slipped pottery from both Tyre and Al Mina, but this cluster may be Cypriot.[496] This leaves us with Red Slip pottery from Al Mina, which was produced with a clay different from that of a number of vessels found in Tyre and southern Phoenicia, although the pottery shapes and the decorations have many parallels in Tyre and its hinterland. As the stratigraphy and the typology of the vessels from Phoenicia used in Liddy's analysis is unclear, further fabric analyses have to address this problem. The many typological parallels in the pottery from Al Mina and Tyre, however, must have some significance. In all, Liddy's study does not exclude significant Phoenician, or Tyrian, influence at Al Mina.

Greek pottery might be more numerous at Al Mina, but even if the available numbers reflect the actual proportions of Greek, Cypriot, Syrian and Phoenician pottery at the site, Phoenician presence at Al Mina Str. 8 is significant. Whether Greeks and Phoenicians settled at the site and whatever the relationship of 'pots and people' were, the distribution pattern clearly points to important trading contacts between Tyre, Al Mina and the north Syrian, Aramaean kingdoms in its hinterland.

There is also historical evidence for a Phoenician presence on the north Syrian coast and in the bay of Iskenderun. Al Mina is only one site in this area. Another port with evidence of a Phoenician presence was Myriandros, a trading place (*emporion*) on the coast, inhabited by Phoenicians, according to Xenophon (*Anabasis* 1.4.6).[497] The location of Myriandros is unknown. Phoenician activity in Cilicia and the bay of Iskenderun is also obvious from a number of Phoenician inscriptions. Local rulers such as Kilamuwa of Sam'al (modern Zincirli) around 825 BC used the Phoenician alphabet to write royal inscriptions. So did Azitawada around 720 BC in his bilingual inscriptions at Karatepe. A new bilingual inscription of the late 8th century BC in Phoenician letters and Luwian hieroglyphs was found in 1997 in the village of Çineköy, south of Adana in the Cilician plain.[498] Another inscription, mentioning the Tyrian god Melkart, was found at Brayj, in northern Syria. It was written by Barhadad and dates to the 9th century BC.

While Al Mina would have been the harbour for Mediterranean trade with north Syria and Mesopotamia, Myriandros was the Phoenician port to southeast Anatolia. Ezekiel 27 mentions Tyrian trade with Tubal and Togarmah in southeast Anatolia. The trade goods mentioned by Ezekiel include horses, mules, slaves and bronze utensils. Metals may have played an important role in these trade connections. Although archaeological evidence for Phoenician trade in the bay of Iskenderun is still missing, the historical sources provide strong indications of continental trade between Phoenicia, southeast Anatolia and northern Syria since the 9th century BC.[499] The first Phoenician pottery at Al Mina presented in this paper dates to *c.* 850 BC or later.

The distribution pattern of pottery in the 7th century BC resembles the pattern of the 8th century BC. **Figure 20** illustrates the connection of pottery types in Al Mina Str. 5–6 with north Syria, but more significantly with Tyre and its hinterland. This situation changed only during the Persian period, with new distribution patterns of pottery in Syria, Lebanon and Palestine. In this period, *c.* 540 – 360 BC, the same pottery types occur in both coastal and inland areas.[500] Identical forms appear from northern inland Syria south to Palestine. It seems that the coastal productions clearly dominated the local pottery types in inland Syria. Local pottery workshops in inland Syria were apparently unable to compete in interregional trade with the coastal production. Almost all vessels of fine ware or higher quality are now imported from Greece, predominantly from Athens.[501] During the Persian period Attic pottery was the most successful imported pottery in Syria. The only local pottery style that successfully competed with Attic pottery was the 'Band-Decorated' style (**Figs 10** and **11**).

To conclude, in the 8th century BC, Al Mina was only a very small harbour with an important hinterland, serving the Iron Age kingdom of Unqi in the present ʿAmuq plain, the Mediterranean gate to northern Syria and eventually Mesopotamia. From my own observations at the site, I estimate the size of the ancient settlement at some 4ha. Thus, Al Mina would have had similar dimensions to other small, but specialised trading sites such as Pithekoussai on Ischia[502] or Toscanos in Spain.[503] Specialised in trade and exchange, these sites or ports of trade depended much on the supply in food and daily needs from the surrounding settlement system. As Woolley pointed out, the nearby settlement of modern Sabuni may have

Figure 22 Cluster analysis of Syrian and Phoenician pottery found in Al Mina Str. 8 and its comparisons with other sites in Syria, Lebanon, Israel/Palestine and Cyprus

Similarity coefficient: Jaccard Number of neighbours considered: 7

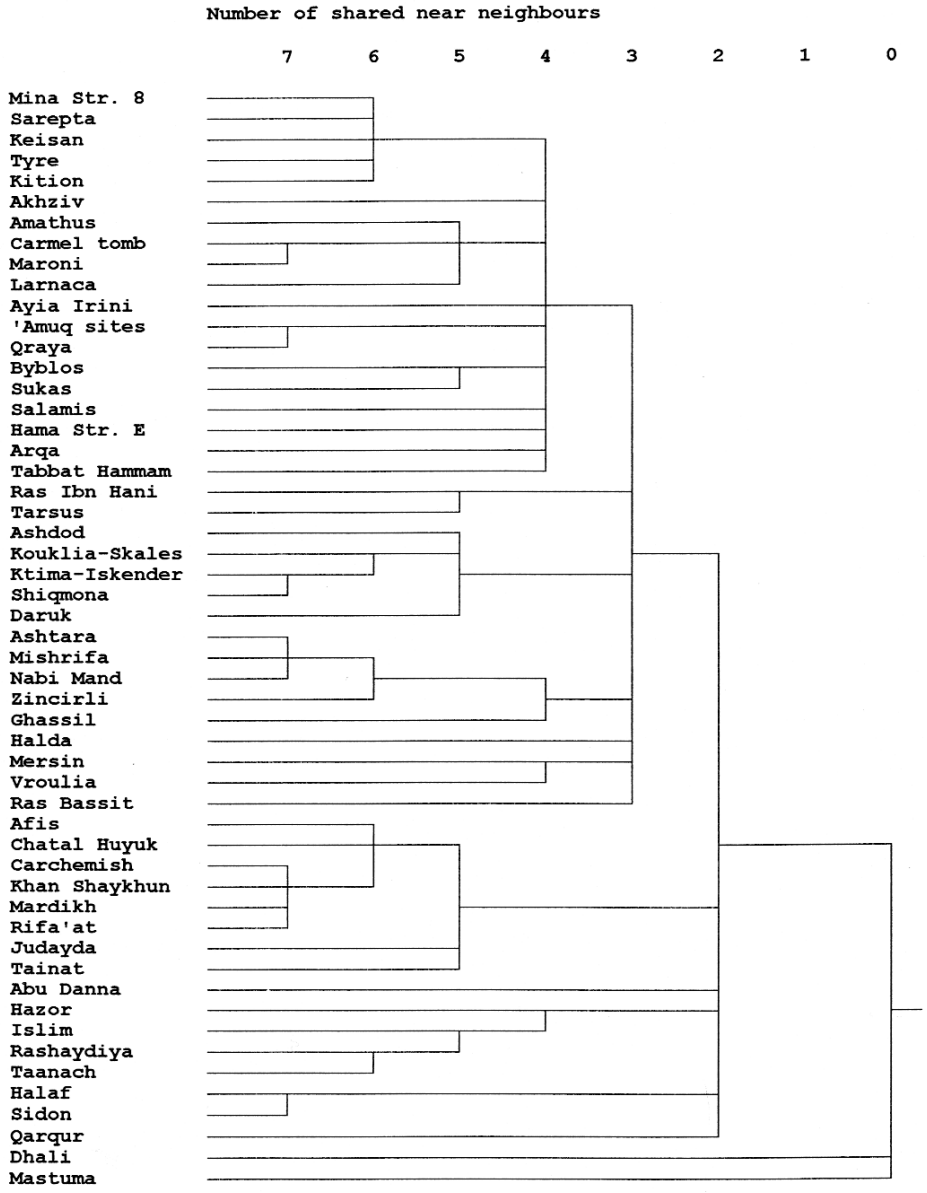

Figure 23 Clusters of Atomic Absorption Spectroscopy Analysis conducted by Liddy[495] on pottery samples from Al Mina and Phoenicia (IAL = Institute of Archaeology, London; LV = Louvre, Paris)

Site	Sample	Liddy's cluster	Museum object	Publication
Al Mina	IA 1	7/1	IAL 55.870	here **Fig. 5.7**
Al Mina	IA 4	7/1	IAL 55.1017	Taylor 1959, fig. 7.5
Al Mina	IA 5	7/1	IAL 55.1017	Taylor 1959, fig. 7.5
Al Mina	IA 2	7/4	IAL 55.1022	
Al Mina	IA 6	7/4	IAL 55.1020	here **Fig. 4.2**
Al Mina	IA 7	7/4	IAL 55.2025	Taylor 1959, fig. 6.4
Al Mina	IA 10	7/4	IAL 55.1779	
Tyre	LV6	7/5	LV AO TYR 2149	
Phoenicia	LV16	7/5	LV AO 25320	
S.Lebanon	LV9	7/7	LV AO 10982	
S.Lebanon	LV11	7/7	LV AO 11048	
Kh. Islim[493]	LV12	7/7	LV AO 11049	
Al Mina	IA 3	8/1	IAL 55.1060	here **Fig. 1.2**
Al Mina	IA 8	8/2	IAL 55.2024	Taylor 1959, fig. 6.11
Tyre	LV5	8/2	LV AO 2145	
Tyre	LV1	8/5	LV AO 2146	
Bassa[494]	LV2	8/6	LV AO 2147	
Bassa	LV3	8/6	LV AO 2175?	
Bassa	LV4	8/6	LV AO 2176	

Figure 24 Comparative stratigraphy

Date BCE	700	600	500	400	300
Abu Danna	← IId/A6	IIc/A5		IIab / A4	
Tell Afis D1	4 3 2 1				
Tell Afis D	6-4 3 2	1			
Tell Afis E	2 1				
Tell ᶜArqa	12 11	10 9E	9D 9C	9BA	
Deve Hüyük	Cemetery I		Cemetery II		
Hama Str.	← E2				
Hama Cemetery	← IV				
Tel Kabri	E3 E2b E2a				
Tall Keisan	5	4	3b	3a	2
Khan ash-Shaykhun	← 1	2	3	4	
Tell Mardikh	←VB2	VC1	VC2 VI	A1 IA2	VIA3
Tell Mastuma	I				
Al Mina	8 7	6 5		4	3 2 →
Ras al-Bassit	B C	D E F	G H		
Ras al-Bassit	4b 5 6	7	8 9	Persian	
Sarepta Area II Y	← C1		B		A2 →
Shaykh Hamad			F 2 F1		
Tell Sukas	← H1	G3	G2 G1		F →
Tarsus ←	Middle Iron	Assyrian	6th Century		
Tyre	IV III	II I			
Date BCE	700	600	500	400	300

played such a role for supply to Al Mina.[504] In the case of Ischia it was assumed that a mixed population of Euboeans and Phoenicians lived and worked there.[505] According to the research presented here it seems to be most probable that such a mixed community of Greeks, Phoenicians and local Syrians existed also at Al Mina. Who ruled the port? During its period of independence the local state of Unqi was most probably in control. If only for tax reasons, any state ruling the ᶜAmuq plain must have had a significant interest in controlling the port.

Later, after the Assyrians conquered the ᶜAmuq plain in 738/720 BC, they established their residency in the former capital at Tayinat. Again, it must have been in their interest to control the small harbour of Al Mina. As a continental power the Assyrians had few means to control or influence the processes that took place in the Mediterranean. But what happened in the Mediterranean was of crucial importance to the Assyrians. Here at the periphery, nearby but inaccessible to their continental war machine, coalitions were formed against the centre of their empire. These coalitions were a deadly threat to their political system. One of the few political possibilities for a continental state to counteract these processes was to have a firm grip on at least the accessible harbours.

There is evidence that already under Tiglath-Pileser III the Assyrians controlled the harbour at Al Mina. Ran Zadok[506] has suggested identifying Al Mina with the ancient site of Ahta, mentioned in an inscription of the king (Stele B II 12'-13'). The text lists a number of sites in northern Syria: '(12')… Reshiṣuri, Mount Ṣapuna, Ahta / (13') the emporium (*karum*) at the seashore – the royal 'store-house' – the boxwood mountain …'.[507] The area of Al Mina is clearly defined by the proximity of Mount Ṣapuna, modern Jabal al-'Aqra. The Assyrian king established his royal 'store-house' (*bit ṣabutatu šárruti*) at the seashore.[508] Ahta may be either Al Mina or a site nearby, close to the seashore, like Sabuni. Thus, if there was a mixed community of Greeks, Phoenicians and Syrians at Al Mina, this community was soon after 740 BC under the sovereignty of the Assyrian empire.

In terms of the economic development at the interface between the Mediterranean and the Ancient Near East, Al Mina was only the gate into northern Syria. More important sites such as Tayinat lay only a few kilometers further up the Orontes. Whichever way research will progress from here, the Phoenician city of Tyre and its trade connections will have to be an integral part of any future studies concerning early Al Mina.

Abbreviations

BM = The British Museum
IAL = Institute of Archaeology, London
Str. = Stratum/Strata

Anderson 1988 = W.P. Anderson, *Sarepta I: A Stratigraphic and Ceramic Analysis of the Late Bronze and Iron Age Strata of Sounding Y at Sarepta (Sarafand, Lebanon)* (Beirut, 1988).
Barag 1985 = D. Barag, *Catalogue of Western Asiatic Glass in the British Museum I* (London, 1985).
Bikai 1978a = P.M. Bikai, *The Pottery of Tyre* (Warminster, 1978).
Bikai 1978b = P.M. Bikai, 'The Late Phoenician Pottery Complex and Chronology', *BASOR* 229 (1978), 47–56.
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Bikai 1987 = P.M. Bikai, *The Phoenician Pottery of Cyprus* (Nicosia, 1987).
Briend and Humbert 1980 = J. Briend and J.P. Humbert (eds), *Tell Keisan (1971–1976): Une cité phénicienne en Galilée* (Orbis Biblicus et Orientales, Series Archaeologica 1; Freiburg/Schweiz, Göttingen, Paris, 1980).
Conrad 1993 = D. Conrad, 'The Akko Ware: A New Type of Phoenician Pottery with Incised Decoration', in: M. Heltzer, A. Segal and D. Kaufman (eds), *Studies in the Archaeology and History of Ancient Israel: In Honour of Moshe Dothan* (Haifa, 1993), 127–42.
Courbin 1993 = P. Courbin, *Fouilles de Bassit: Tombes du Fer* (Paris, 1993).
Gilboa 1995 = A. Gilboa, 'The Typology and Chronology of the Iron Age Pottery and the Chronology of Iron Age Assemblages', in: E. Stern (ed.): *Excavations at Dor, Final Report. Vol. I B: Areas A and C: The Finds* (Qedem Reports 2; Jerusalem, 1995), 1–49.

Haines 1971 = R.C. Haines, *Excavations in the Plain of Antioch, Vol. 2. The Structural Remains of the Later Phases: Chatal Hüyük, Tell al-Judaidah, and Tell Taʿyinat* (Oriental Institute Publications 95; Chicago, 1971).
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Kearsley 1995 = R.A. Kearsley, 'The Greek Geometric Wares from Al Mina Levels 10–8 and Associated Pottery', *Mediterranean Archaeology* 8 (1995), 7–81.
Lehmann 1996 = G. Lehmann, *Untersuchungen zur Späten Eisenzeit in Syrien und Libanon: Stratigraphie und Keramikformen zwischen ca. 720 bis 300 v.Chr.* (Altertumskunde des Vorderen Orients 5; Münster, 1996).
Lehmann 1998 = G. Lehmann, 'Trends in the Pottery Development of Late Iron Age Syria and Lebanon, ca. 700 to 300 B.C.', *BASOR* 311 (1998), 7–37.
Lehmann 2000 = G. Lehmann, 'East Greek or Levantine? Band-Decorated Pottery in the Levant during the Achaemenid Period', *Transeuphratène* 19 (2000), 83–113.
Lehmann 2002 = G. Lehmann, 'Pottery: Late Bronze Age, Iron Age', in: A. Kempinski *et al.*, *Kabri: The 1986–1993 Excavation Seasons* (Tel Aviv University, Sonia and Marco Nadler Institute of Archaeology Monograph Series 20: Tel Aviv, 2002), 176–222.
Liddy 1996 = D.J. Liddy, 'A Chemical Study of Decorated Iron Age Pottery from the Knossos North Cemetery', in: J.N. Coldstream and H.W. Catling (eds), *Knossos North Cemetery Early Greek Tombs, Vol. II Discussions* (London, 1996), 465–514.
Mazar and Panitz-Cohen 2001 = A. Mazar and N. Panitz-Cohen, 'Timnah (Tel Batash) II: The Finds from the First Millennium BCE', *Qedem* 42: *Timnah (Tel Batash) Final Reports* 2 (Jerusalem, 2001).
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Woolley 1937 = C.L. Woolley, 'Excavations near Antioch in 1936', *Antiquaries Journal* 17 (1937), 1–15.
Woolley 1938 = C.L. Woolley, 'Excavations at Al Mina, Sueida', *JHS* 58 (1938), 1–30, 133–70.
Woolley 1939 = C.L. Woolley, 'The Iron Age Graves of Carchemish [Yunus]', *LAAA* 26 (1939), 11–37.

Notes

1 I am grateful to John Boardman for his advice and for sharing his observations on Al Mina, many of them still unpublished, with me. Of course, I am responsible for any errors of fact or interpretation.
2 Woolley 1937, 3.
3 Woolley 1937, 3.
4 C.L. Woolley, *A Forgotten Kingdom* (London, 1953), fig. 24b.
5 The sanctuary is situated at UTM coordinates 766189–995247.
6 Woolley 1937, 1 and 1938, 1.
7 Kearsley 1995.
8 J.P. Descoeudres, 'Euboeans in Australia: Some Observations on the Imitations of Corinthian Kotylai made in Eretria and found in Al Mina', in: *Eretria* 6 (Berne, 1978), 7–19.
9 Personal communication, cf. J. Boardman, 'Al Mina and History', *OJA* 9 (1990), 169–90, esp. 171–2; Kearsley 1995, 9 n. 2
10 Woolley 1937; Woolley 1938; C.L. Woolley, 'The Date of Al Mina', *JHS* 68 (1948), 148; Woolley 1953 (n. 4). The Greek pottery found at Al Mina was published by J.D. Beazley, 'The Excavations at Al Mina, Sueidia: 3. The Red Figured Vases', *JHS* 59 (1939), 1–44 and M. Robertson, 'The Excavations at Al Mina, Sueidia: 4. The Early Greek Vases', *JHS* 60 (1940), 2–21, and *JHS* 66 (1946), 125 (Cf. *JHS* 68 [1948], 148).
11 This incomplete list comprises some of the most important publications and discussions of finds from Al Mina after Woolley's first publications:
Greek pottery: J.D. Beazley, *ABV*; id., *ARV*; id. *Para.*; id., 'Panathenaica', *AJA* 47 (1943), 441–65; Boardman (n. 9); J. Boardman, 'Early Euboean Pottery and History', *BSA* 52 (1957), 1–29; id., 'Greek Potters at Al Mina?', *Anat. Stud.* 9 (1959), 163–9; id., 'Tarsus, Al Mina and Greek Chronology', *JHS* 85 (1965), 5–15; id., *The Greeks Overseas* (4th edn; London, 1999); id., 'An Inscribed Sherd from Al Mina', *OJA* 1 (1982), 365–7; id., 'Provenance Studies of Greek Pottery of the Historic Period', in: R.E. Jones (ed.), *Greek and Cypriot Pottery: A Review of Scientific* Studies (Athens, 1986), 627–747 (Al Mina: pp. 691–8); C. Clairmont, 'Greek Pottery from the Near East', *Berytus* 11 (1955–57), 85 –141, and *Berytus* 12 (1956–58), 1–34 (cf. Addenda pp. 32–44, where al- Mina pottery in the Antakya Museum is mentioned); R.M. Cook, 'The Distribution of Chiot Pottery', *BSA* 44 (1949), 154– 61, esp. 160; Descoeudres (n. 8); D. Gill, 'The Workshops of the Attic Bolsal', in: *Ancient Greek and Related Pottery.* Proceedings of the International Vase Symposium (Allard Pierson Series 5; Amsterdam, 1984), 102–6; id., 'Two Type B Skyphoi in Birmingham', *BSA* 80 (1985), 115–8 (discussed *i.a.* the vessels BM GR 1960.3-1.2 to 12); id., *The Date of Level IV at Al Mina.* Unpublished Manuscript 1987; A.W. Johnston and R.E. Jones, 'The 'SOS' Amphora', *BSA* 73 (1978), 103–41; C.P. Kardara, *Rodiake angeiographia* (Vivliotheke tes en Athenais Archaiologikes Hetaireias 49; Athens, 1963); Kearsley 1995; R.A. Kearsley, *The Pendant Semi-Circle Skyphos* (BICS Supp. 44; London, 1989); J.Y. Perreault, *La céramique attique au Levant*, unpublished dissertation École des Hautes Études en Sciences Sociales (Paris, 1984), fig. 3; M. Popham, 'Euboean Exports to Al Mina, Cyprus, and Crete: A Reassessment', *BSA* 78 (1983), 281–90; M. Popham, H. Hatcher and A.M. Pollard, 'Al Mina and Euboea', *BSA* 75 (1980), 151–61; D. Saltz, *Greek Geometric Pottery in the East: The Chronological Implications*, unpublished Ph.D. thesis Harvard University (1978); E. Walter-Karydi, *Samische Gefäße des 6. Jahrhunderts v.Chr.* (Samos 6.1; Bonn, 1973), nos 89–90, 159, 186, 658, 917.
Near Eastern pottery: E.J. Peltenburg, 'Al Mina Glazed Pottery and its Relations', *Levant* 1 (1969), 73–96; Taylor 1959.
Cypriot pottery: E. Gjerstad, *The Swedish Cyprus Expedition 4.2. The Cypro-Geometric, Cypro-Archaic and Cypro-Classical Periods* (Stockholm, 1948) (Index: 'Al Mina' und 'Tell Sheykh Yussuf'.); E. Gjerstad, 'The Stratification at Al Mina (Syria) and its Chronological Evidence', *Act. A.* 45 (1974), 107–23.
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32 Anderson 1988, pl. 47:F–1A, pp. 478–9, Str. B–D1 with a peak in C1; cf. Lehmann 1996: type 78a–b with more references.
33 Bikai 1987, 37–8.
34 Bikai 1978a: Fine Ware Plate 8; Bikai 1978b, 52 Fine Ware Plate Class 1.
35 Bikai 1978a, pl. 19.1–8.
36 Herrera González 1990, pl. 64.93–5.
37 Only one is fully described at Bikai 1987, 38 no. 460; cf. Bikai 1981, 24, no. 24.
38 Bikai 1987, 62.
39 Bikai 1978a, pl. 11.7.
40 Bikai 1987, no. 460.
41 Bikai 1978a, 8 (Fine Ware Plate 8, with further references).
42 F. Braemer, 'La céramique à engobe rouge de l'âge du fer à Bassit', *Syria* 63 (1986), 221–46, no. 4.
43 Herrera González 1990, pl. 64. 93–5.
44 Yadin *et al.* 1961, pl. 208.24–5.
45 Bikai 1978a, 28, Fine Ware Plate 6; Bikai 1978b, Fine Ware Plate Class 2, Type 1.
46 Bikai 1987, 62.
47 Lehmann 1996, 78b/7.
48 Bikai 1987, nos 461, 501–2, 504, 506–9.
49 Bikai 1978a, 28, Fine Ware Plate 6 (most examples from Str. 4).
50 Z. Gal and Y. Alexandre, *Horbat Rosh Zayit: An Iron Age Storage Fort and Village* (Israel Antiquities Authority, Reports 8; Jerusalem, 2000), figs 3.72.2–4; 3.76.3; 3.77.3; 3.78.1–2, 5, 8; 3.82.19–20; 3.86.2; 3.90.22–3.
51 Ibid, fig. 7.11.10.
52 S. Levy and G. Edelstein, 'Cinq années de fouilles à Tell ʿAmal (Nir David)', *Revue Biblique* 79 (1972), 325–67, fig. 15.3.
53 Y. Yadin *et al.* (eds), *Hazor, Vol. I: An Account of the 1st Season of Excavations 1955* (Jerusalem: Magness Press, 1958), pl. 49.23.
54 Bikai 1978a, 26, included in Fine Ware Plate 2; Bikai 1978b, 52, Fine Ware Plate Class 2, included in Type 2; Bikai 1981, type I.A.
55 Bikai 1987, 62.
56 Lehmann 2002, type B-3c.
57 Bikai 1987, nos 456, 462–9, 493, 510, 513–4.
58 Bikai 1978a, 26, included in Fine Ware Plate 2.
59 Y. Yadin *et al.* (eds), *Hazor, Vol. II: An Account of the 2nd Season of Excavations 1956* (Jerusalem, 1960), pl. 82.16.
60 Herrera González 1990, pl. 63.76, 79, 81.
61 Lehmann 2002, type B-3c.
62 Bikai 1978a, 26, included in Fine Ware Plate 2; Bikai 1978b, 52, Fine Ware Plate Class 2, included in Type 2; Bikai 1981, 24, type I.B.
63 Bikai 1987, 62.
64 Bikai 1987, nos 457–8, 470, 494–6, 511–2.
65 Bikai 1978a, 26, included in Fine Ware Plate 2.
66 Braemer (n. 42), no. 7.
67 Herrera González 1990, pl. 64.97.
68 Lehmann 2002, type B-3a.
69 Bikai 1978a, 26, Fine Ware Plate 1; Bikai 1978b, Fine Ware Plate Class 2, Type 3; Bikai 1981, 24, type I.D.
70 Bikai 1987, 62.
71 Lehmann 2002, type B-3b.
72 Stager personal communication.
73 Taylor 1959, fig. 6.1–3.
74 Woolley 1938, 155.
75 Taylor 1959, 79.
76 Taylor 1959, fig. 6.1.
77 Taylor 1959, fig. 6.2–3.
78 Bikai 1987, no. 471–3, 497–8.
79 Bikai 1978a, 26, Fine Ware Plate 1.
80 Briend and Humbert 1980, pl. 40.12.
81 Herrera González 1990, pl. 63.75, 77, 80, 82–5.
82 Lehmann 2002, type B-3b.
83 Taylor 1959, 83.
84 Woolley 1937, pl. 11.2: 3rd line, 2nd left.
85 Bikai 1978a, 41, type Jug 11; cf. Bikai 1987, no. 119 for a jug from Cyprus of unknown provenance.
86 Bikai 1978a, 57.
87 B. Mazar *et al.*, 'En-Gedi: The First and Second Seasons of Excavations, 1961–1962', *ʿAtiqot* 5 (1966), 1–100, fig. 7.3–4 = Lehmann 1996, type 292.
88 Cf. a red slipped jug from Çatal Hüyük phase Oc, G.F. Swift Jr., *The Pottery of the ʿAmuq Phases K to O*. Unpublished Ph.D. thesis University of Chicago (1958), fig. 43.
89 Taylor 1959, 83.
90 Cf. Woolley 1938, 154–5.
91 Mazar *et al.* (n. 87), fig. 7.3–4.
92 Woolley 1939, pl. 24.J1.
93 Yadin *et al.* 1961, pl. 228.1.
94 Yadin *et al.* 1961, pl. 218.5.
95 Bikai 1978a, pl. 20.6.
96 Taylor 1959, 83, fig. 6.38, 40–41.
97 Lehmann 1996, 359–61, type 1–4.
98 M.J. Hughes, 'Neutron Activation Analysis of Red-Burnished Platter Bowls found in Northern Syria, 9th–8th Centuries B.C.' Unpublished research report, no date.
99 Lehmann 1996, pl. 1.

100 For full references of the many vessels found in Syria see Lehmann 1996, 359–61.
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103 Haines 1971; T.P. Harrison, 'Tell Taʿyinat and the Kingdom of Unqi', in: P.M.M. Daviau, J.M. Wevers and M. Weigl (eds), *The World of the Aramaeans: Biblical Studies in Honour of Paul-Eugène Dion* (Journal for the Study of the Old Testament, Supplement Series 324; Sheffield, 2001), 115–32.
104 Haines 1971, 7, pl. 4c and d, and many more references in the unpublished field diaries.
105 Liddy 1996.
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109 P.J. Riis *et al.*, *Hama 2.2: Les objets de la période dite syro-hittite (Age du Fer)* (Copenhagen, 1990), no. 595.
110 J.M. Lundquist, 'Tell Qarqur: The 1983 Season', *Annales Archéologiques Arabes Syrienne* 33.2 (1983), 273–88, fig. 6.7.
111 Bikai 1992 (n. 18), 97.
112 Bikai 1987, 547.
113 Briend and Humbert 1980, pl. 40.3; cf. also pl. 40.1, 1a–b, 2, 2a, 3a–d, 4a.
114 Taylor 1959, fig. 6.17.
115 Taylor 1959, 81.
116 Kition II Bothros 16/3 Fl. 3, Bikai 1987, no. 478.
117 Kition II court C/27 between floors 1 and 3, Bikai 1987, no. 477.
118 M. Dunand, *Fouilles de Byblos II* (Paris, 1954–58), no. 9609.
119 Bikai 1987, nos 477–8.
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122 Lehmann 1996, types 28–29.
123 Bikai 1978a, 22–3.
124 Anderson 1988.
125 Bikai 1987.
126 Bikai 1978a, 22–3.
127 Briend and Humbert 1980, pl. 38.6e.
128 Taylor 1959, fig. 6.33.
129 Taylor 1959, fig. 6.37.
130 Taylor 1959, 83.
131 = Lehmann 1996, 28/4 and 28/5, both = Bikai Plate type 3.
132 Lehmann 1996, 29/5.
133 Lehmann 2002, type B-52.
134 Lehmann 1996, 376 type 85a.
135 Lehmann 1996, 376 type 85b.
136 Lehmann 1996, 376–7 type 85c.
137 B. d'Agostino, 'Tombe 'principesche' dell'orientalizzante antico da Pontecagnano', *Monumenti Antichi: Serie Miscellanea* 2.1.49 (1977), 9, 15 fig. 25, pl. 28a, b (L 80) = U. Gehrig and H.G. Niemeyer, *Die Phönizier im Zeitalter Homers.* Ausstellungskatalog Hannover (Mainz, 1990), no. 110.
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154 Anderson 1988.
155 Bikai 1987.
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157 Taylor 1959, fig. 6.10, 13, 15.
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162 Bikai 1987, no. 552.
163 Lehmann 1996, 386 type 145b.
164 Bikai 1987, nos 487–90.
165 Anderson 1988.
166 Bikai 1978a, 28.
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174 B. Hrouda, *Tell Halaf 4: Die Kleinfunde aus historischer Zeit* (Berlin, 1960), pls 58.65, 63.1.
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180 Taylor 1959, fig. 1.16.
181 Taylor 1959, fig. 6.1.
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183 Woolley 1937, pl. 13.1, for the drawing cf. Lehmann 1996, 379/2.
184 Bikai 1987, no. 584.
185 Bikai 1987, 575.
186 Bikai 1987.
187 Courbin 1993, fig. 11.3.
188 Courbin 1993, fig. 11.1.
189 Courbin 1993, fig. 11.5.
190 Courbin 1993, fig. 11.2.
191 Courbin 1993, fig. 11.4.
192 Not illustrated here, see the rough sketch in Woolley 1938, fig. 27.11.
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211 Anderson 1988.

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230 Lehmann 1996, type 247; Briese (n. 224), type IV.4 and IV.6.
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250 Taylor 1959, fig. 7.1.
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283 Peltenburg (n. 11) pl. 20d IZ.4.
284 Peltenburg (n. 11), 94.
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342 Barag 1985, 225 fig. 13.
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483 Lehmann 1996, 315–9; to this list one has to add the newly published finds recorded by Kearsley in 1995 in the Antakya museum.
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485 Niemeier (n. 219), fig. 19.10.
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489 Kearsley 1995, 80.
490 Taylor 1959, 79.
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492 Similar Liddy 1996, 486.
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Large, Late and Local?

Scientific Analysis of Pottery Types from Al Mina

Sally-Ann Ashton and Michael Hughes[1]

Sir Leonard Woolley excavated the site of Al Mina for two seasons, in 1938 and 1939. Full reports on the archaeology, small finds and earlier pottery types were published by the original team, and yet the chronology and character of the site remain the subject of scholarly debate today.[2] Woolley divided the site of Al Mina chronologically into three periods.[3] This paper is concerned with the later occupation levels, from 539 BC (when Cyrus came to power) until 301 BC, when the port was replaced by Seleucia. Most of the previous work on Al Mina had concentrated on the early traders rather than the later nature of the port.

In 1994 the sorting and registration of pottery fragments that Woolley had deposited in the British Museum was begun, along with work on a much smaller group of small finds and human remains from the site. Some pottery, including material published by Robertson, had been registered in the 1960s, but some 6,000 sherds remained. In his original report Woolley mentioned the poor state of preservation of many of the smaller vessels, which seldom fitted together.[4] This was also found to be the case with the pottery that had been brought back to London, and joins proved to be rare and restricted to small sections of entire pots. The aim of this paper is to look more carefully at the ceramic material from the later levels that were excavated by Woolley in the hope of establishing the quantity of imported ceramic wares and their place of manufacture.

There was a relatively high quantity of larger vessels recorded from levels 5–6 and 2–4, that is to say the later levels from the site.[5] The most striking example from this group is a complete krater, along with several fragments from similar vessels (**Fig. 1**). The pots are decorated with an ivy leaf design and three bold bands below the handles; the remainder of the vessel is unglazed and reveals a reddish yellow micaceous fabric (Munsell 5YR 7/6 to 6/6).

In addition to the ivy-leaf kraters there are smaller examples of the same shape, decorated with wavy lines and horizontal bands (**Fig. 2**). Again some share the same colour and fabric type with their larger counterparts; others have slightly larger inclusions and are light reddish brown (Munsell 5YR 6/3) to reddish brown (Munsell 5YR 6/8) in colour.[6]

A related group of large closed vessels consisting of fragments of amphorae and oinochoai were also in question (**Fig. 3**). Their fabrics are the same as the ivy leaf kraters and the wavy line kraters and many are decorated with floral motifs and wavy lines. Within the group, however, there are some vessels made from much paler, brownish yellow clay (Munsell 10YR 6/6) with large gritty inclusions. Because there are three distinctive fabric types it was difficult to know which, if any, were the imports. It seemed likely that some of the group were copies but none were obviously similar enough to the known local fabrics to be easily distinguished as such.

In the original site publications the ivy leaf kraters were described as being of local manufacture. Lehmann reiterated this in his publication on Syrian pottery in 1996, by including the Al Mina material in his survey of locally manufactured pottery.[7]

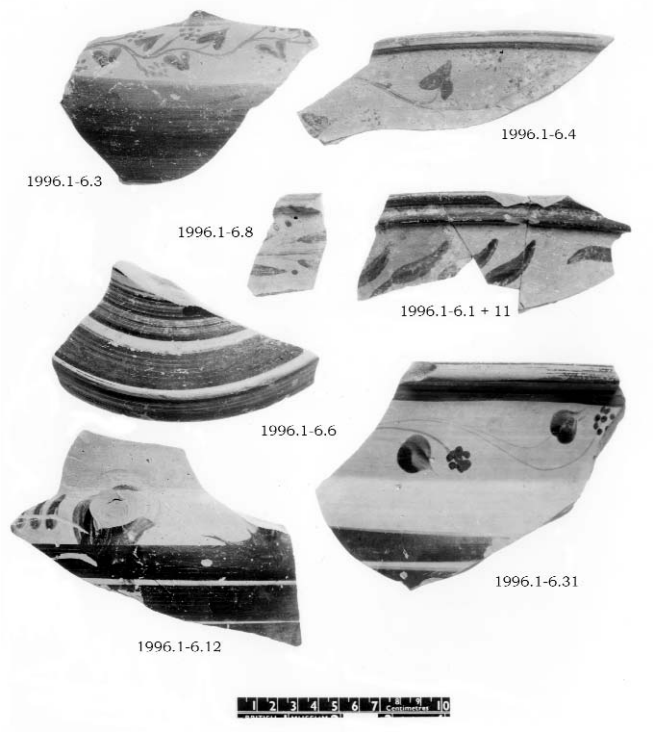


Figure 1 Imported krater fragments with ivy leaf decoration

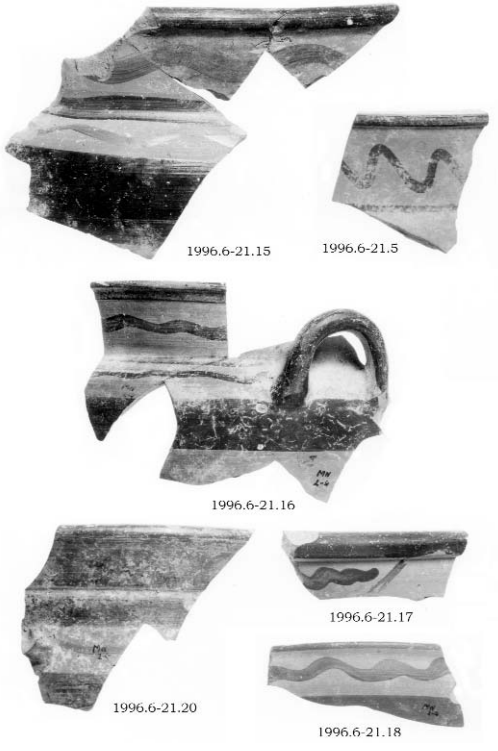


Figure 2 Imported krater fragments with wavy-line decoration

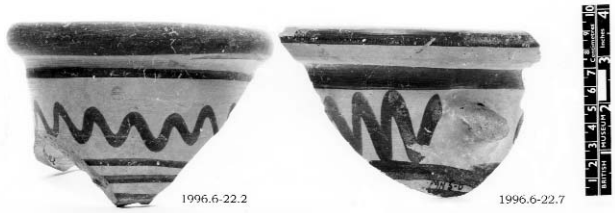


Figure 3 Imported amphora fragments with wavy-line decoration

Figure 4 Local Al Mina juglets

Woolley believed that the majority of the material from the later levels consisted of local copies of Greek vessels, and interpreted their closeness to the originals as an indication of the port's continuing Greek character.[8] Boardman also believed that there was a strong Greek presence at the site during the later periods of occupation, using epigraphical evidence to support Woolley's original interpretation of the site.[9]

Any conclusions drawn from the pottery will be of considerable importance in determining the character of Al Mina during the 5th and 4th centuries BC. For not only will the results indicate the origin of pottery found at the site, but also the trade routes between Greece to Syria. The problem with the usual comparative methods of fabric types was that there seemed to be a wide range of local clays. This can be seen clearly in the case of the so-called Al Mina juglets (**Fig. 4**). These locally manufactured vessels are generally reddish yellow in colour (Munsell 7.5 YR 7/6), but the size and quantity of inclusions vary considerably, with some indeed being similar to the ivy leaf kraters. For this reason it was decided to undertake a chemical analysis of the fabrics in order to determine whether the majority of the pottery that Woolley had collected was in fact of local manufacture.

Scientific analysis

Neutron activation analysis (NAA) was used for the tests. This involves powder samples being taken from each sherd by drilling with a 2mm diameter tungsten carbide drill bit mounted in a low-voltage electric hand drill. The samples (**Table 1**) were analysed using the normal NAA technique employed at the British Museum.[10] Analytical data on 27 elements were obtained, and the results are given in **Table 2** (at the end of this article).

Principal components analysis (PCA) was then applied to the elemental data to look for patterns in the pottery compositions. From these tests, two major chemical groups emerged, namely the local pottery (i.e. produced at or near Al Mina) and imported wares. The PCA results can be expressed in the form of a diagram (**Diagram 1**) by plotting the first two principal components: the elements that contribute to each component axis are listed in the caption. This figure may be considered a type of chemical composition map, each symbol representing the analysis of one sherd, and the position of the symbol indicating its chemical composition relative to the other sherds. The different symbols represent the eight pottery groups (1–8) analysed in the project and the three external reference groups. The grouping of the samples did not, however, form any part of the statistical treatment of the data; they have only been added to the figure to clarify where each sample appears. Items that are close together are similar in composition. The normal assumption underpinning chemical analysis of ceramics is that similar compositions indicate that the pottery was made of the same clay. The relative contribution of different chemical elements to Diagram 1 is shown in the biplot (**Diagram 2a**).[11]

A selection of 45 samples of pottery was made. Two different types of definite local pottery were used as control groups (groups 1 and 2 in **Table 1** and **Diagram 1**): the so-called Al Mina juglet (complete examples, rather than the fragmentary examples that were analysed, are illustrated in **Fig. 4**) and Syrian red slip wares (**Fig. 5**). The result of the previous analysis of locally produced medieval pottery from Al Mina was also available.[12] The reference group of imported wares consisted of Ionian cups, known to have been made in western Asia Minor (group 3); the analysis of Roman and earlier pottery from

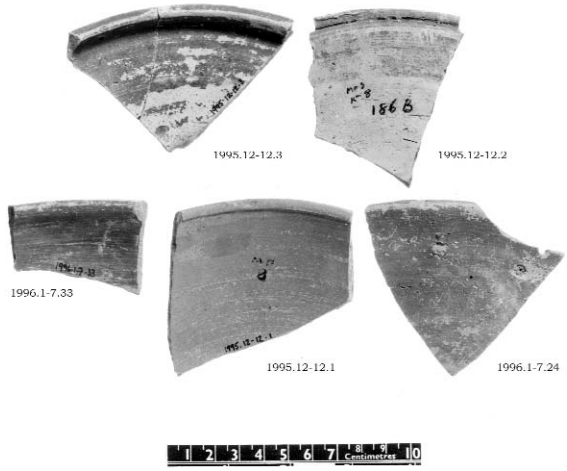


Figure 5 Syrian red slip fragments

Figure 6 Local krater fragments with wavy-line decoration

Table 1 List of pottery samples analysed, with ware group and conclusion from neutron activation analysis

BMRL	Group	Reg. No.	Description	NAA conclusion	Illustration
6977-9-L	1*	1995.12-28.111	Al Mina juglet	local	
6977-10-X	1	1995.12-28.94	Al Mina juglet	local	
6977-11-K	1*	1995.12-28.79	Al Mina juglet	local	
6977-12-M	1*	1995.12-28.123	Al Mina juglet	local	
6977-31-W	2*	1995.12-12.1	Local red slip	local	Fig. 5
6977-32-Y	2*	1995.12-12.2	Local red slip	local	Fig. 5
6977-33-L	2*	1995.12-12.3	Local red slip	local	Fig. 5
6977-34-N	2*	1996.1-7.24	Local red slip	local	Fig. 5
6977-35-Q	2*	1996.1-7.33	Local red slip	local	Fig. 5
6977-24-Y	3*	1995.10-12.47	Ionian cup fragment	import C	
6977-25-L	3	1995.10-12.51	Ionian cup fragment	import A	
6977-26-N	3	1995.10-12.52	Ionian cup fragment	import A	
6977-27-Q	3*	1995.10-12.57	Ionian cup fragment	import A	
6977-28-T	3*	1995.10-12.62	Ionian cup fragment	import A	
6977-29-X	3*	1995.10-12.117	Ionian cup fragment	import A	
6977-30-R	3*	1995.10-12.131	Ionian cup fragment	import A	
6977-17-L	4*	1996.1-6.3	Krater fragment with ivy leaf	import B	Fig. 1
6977-18-N	4*	1996.1-6.4	Krater fragment with ivy leaf	import B	Fig. 1
6977-19-Q	4*	1996.1-6.6	Krater fragment with ivy leaf	import B	Fig. 1
6977-20-M	4*	1996.1-6.8	Krater fragment with ivy leaf	import B	Fig. 1
6977-21-P	4	1996.1-6.1/11	Krater fragment with ivy leaf	import B	Fig. 1
6977-22-R	4*	1996.1-6.12	Krater fragment with ivy leaf	import B	Fig. 1
6977-23-W	4*	1996.1-6.31	Krater fragment with ivy leaf	import B	Fig. 1
6977-36-T	5*	1996.6-21.1	Krater fragment with wavy line	local	Fig. 6
6977-37-X	5*	1996.6-21.5	Krater fragment with wavy line	import B	Fig. 2
6977-38-K	5*	1996.6-21.15	Krater fragment with wavy line	import B	Fig. 2
6977-39-M	5*	1996.6-21.16	Krater fragment with wavy line	import B	Fig. 2
6977-40-Y	5*	1996.6-21.17	Krater fragment with wavy line	import B	Fig. 2
6977-41-L	5*	1996.6-21.18	Krater fragment with wavy line	import B	Fig. 2
6977-42-N	5*	1996.6-21.19	Krater fragment with wavy line	local	Fig. 6
6977-43-Q	5*	1996.6-21.20	Krater fragment with wavy line	import B	Fig. 2
6977-44-T	5*	1996.6-21.21	Krater fragment with wavy line	local	Fig. 6
6977-45-X	5	1996.6-21.22	Krater fragment with wavy line	local	Fig. 6
6977-2-X	6*	1999.6-24.3	Oinochoe fragment	import D	
6977-3-K	6	1996.6-24.4	Oinochoe fragment	import B	
6977-8-Y	6	1996.6-24.7	Oinochoe fragment	import C	
6977-4-M	7*	1994.6-22.2	Painted amphora/hydria fragment	import B	Fig. 3
6977-5-P	7*	1994.6-22.12	Painted amphora/hydria fragment	import B	
6977-13-P	7*	1994.6-22.7	Painted amphora/hydria fragment	import A	Fig. 3
6977-14-R	7*	1994.6-22.3	Painted amphora/hydria fragment	import C	
6977-1-T	8*	1995.12-26.84	Painted amphora/hydria fragment	import B	
6977-6-R	8*	1995.12-26.81	Painted amphora/hydria fragment	local	Fig. 7
6977-7-W	8*	1995.12-26.77	Painted amphora/hydria fragment	local	Fig. 7
6977-15-W	8*	1995.12-26.66	Painted amphora/hydria fragment	local	Fig. 7
6977-16-Y	8*	1995.12-26.43	Painted amphora/hydria fragment	local	Fig. 7

BMRL: laboratory reference number

a * in the group column indicates that the pottery was analysed by both neutron activation and ICP-AES

western Turkey, as well as the results from the analysis of bird bowls, were also considered.[13] Against these reference groups were compared the analyses of a range of five different pottery types found at Al Mina, but of unknown provenance, which are listed in Table 1 and Diagram 1; these include kraters with ivy leaf decoration (group 4; **Fig. 1**), kraters with wavy line decoration (group 5; **Figs. 2 and 6**), oinochoai (group 6) and painted amphorae or hydriai (groups 6 and 7; **Figs. 3 and 7**).

The results

The dividing line drawn almost vertically down **Diagram 1** separates the local pottery types on the left from the imported wares, which appear in clusters on the right. These groupings have been assigned on the basis that all the local reference pottery samples (groups 1 and 2) fall on the left, whilst the Ionian cups (group 3), the reference group for imported pottery, fall on the right. In addition, the inspection of the actual analysis data indicates large differences in chemical composition, which indicate that geologically different clays were used in the production of these two major pottery groups. Within the main group of imported wares there were clearly a number of sub-groups, which have been labelled 'import A to D'. The average concentrations of the local pottery and import sub-groups are given in **Table 3** (at the back of this article).

Local pottery

The Al Mina juglets (group 1) and the Syrian red slip (group 2) samples have slightly different clay compositions, forming separate local sub-groups on **Diagram 1**. Such discrepancies are not unusual for pottery produced from slightly different local

Diagram 1 Principal components analysis (PCA) results on pottery from Al Mina

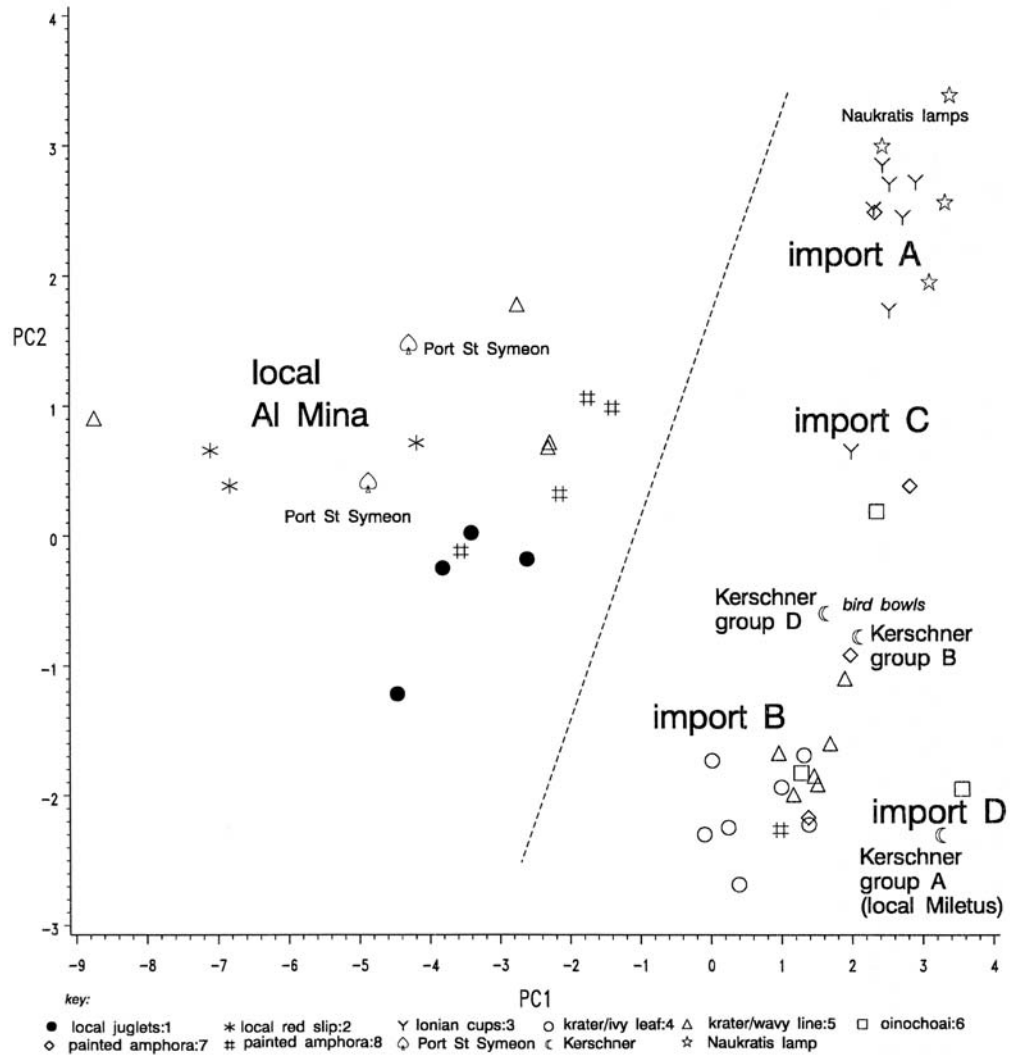
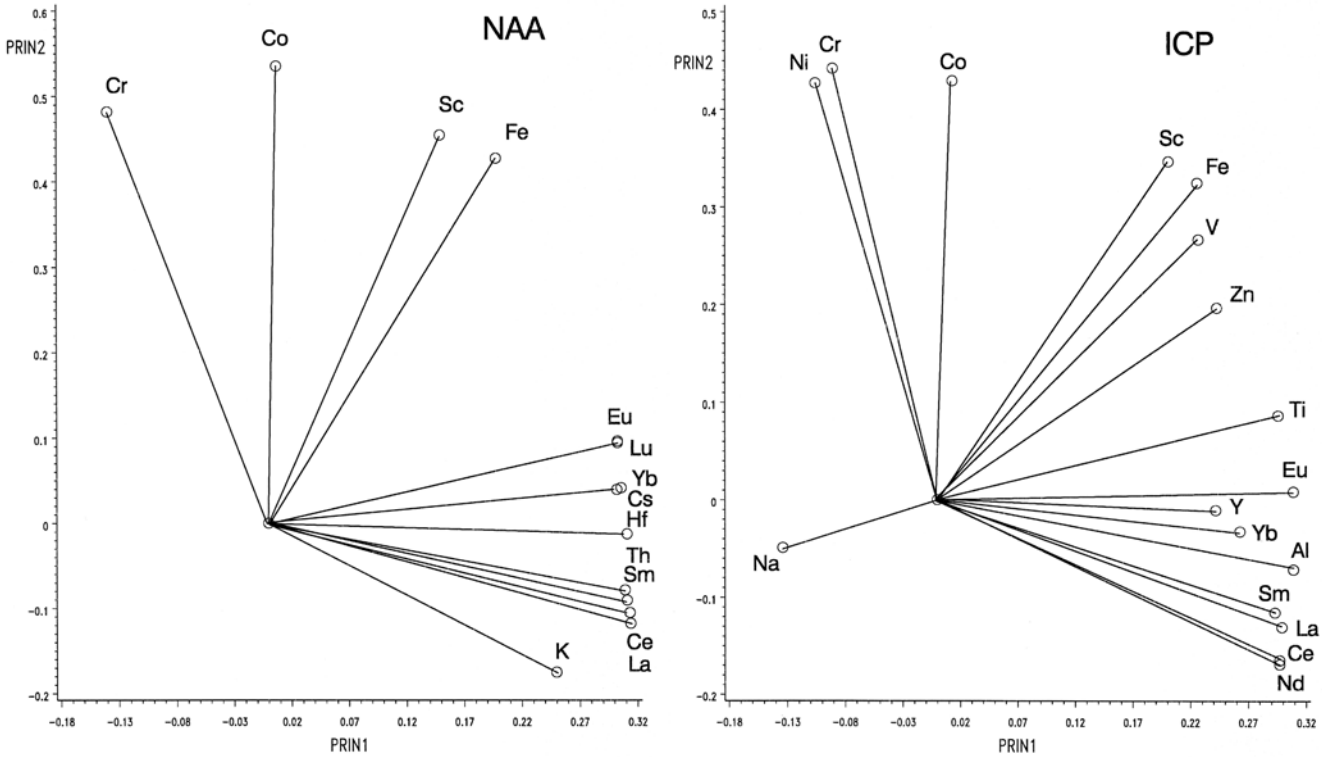


Diagram 2 Biplot showing the relative contribution of different chemical elements analysed in (a) NAA and (b) ICP-AES to PCA results on pottery from Al Mina



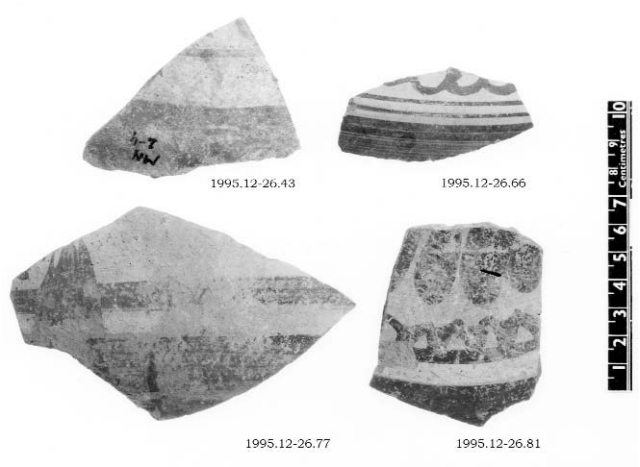


Figure 7 Local amphora fragments from group 8

Figure 8 Imported bowls with painted band decoration

clays, or clays that were subject to variations in processing. The dataset of previous analysis of local pottery from Al Mina from the 12th-century AD Port St. Symeon ware contained two sub-groups, both of which were consistent with the local pottery analysed in our project.[14] When included in the PCA plot (**Diagram 1**), the average concentrations for the two sub-groups fall among the local (groups 1 and 2) pottery.

Imported pottery

All four groups have similar concentrations of elements, with slight differences, which would suggest that they are from the same general production area. Manufacture in western Asia Minor seems a reasonable hypothesis for all four import sub-groups, since import A contains all but one of the Ionian cup samples. Import A is characterised by high concentrations of iron, scandium and chromium. Import B has consistently low concentrations of chromium, and lower levels of iron and scandium than import A. Two other sub-groups (C and D) have also been recognised.

Comparing the Al Mina import groups with published analyses of pottery produced in western Asia Minor has highlighted the NAA data of Kerschner and Mommsen *et al.* on bird bowls and related pottery from the Archaic period at Miletus.[15] Kerschner and Mommsen identify four composition groups: A (local Miletus); B/C originally thought to be separate sub-groups: B containing bird bowls of unknown place of manufacture and a sub-group of B called C, although in their most recent publication the chemical composition of B and C have been found to be the same and so these two groups are in fact one; and D (bird bowls from Miletus).[16] We have entered the average compositions for A, B and D into the PCA, to see the compositional relationship with the Al Mina imports. From the raw data, our import B group with the low chromium and high amounts of other elements, is apparently similar to Kerschner and Mommsen's group D, which they conclude was made at Miletus in a different workshop using the same clay as their group A.[17] On **Diagram 1**, Kerschner and Mommsen's group D occurs just above the import B, while their group A (local Miletus) occurs to the right of import B, indicating that it contains higher concentrations of most elements. Their group A contained pottery of a finer fabric than our import B. There seem therefore to be sufficient links between import B and Kerschner and Mommsen's groups A and D to suggest an origin for import B in an area close to Miletus, if not actually in the town. The composition of the oinochoai (our import D) is also close to Kerschner and Mommsen's group A. This indicates a continuing trade into the late Classical Period.

Kerschner and Mommsen's data, however, showed no parallels to our import A. When parallels were looked for in the Department's previous NAA datasets, the closest parallels were found to be with a group of pottery lamps from Ephesos.[18] In the original report on these lamps, Hughes noted that the four lamps are consistent with the composition of local pottery from the island of Samos, and that earlier work by Dupont had suggested a Samian origin for at least some of the Ionian cups, although this hypothesis was more recently revised by Dupont in 2000. Akurgal, Kerschner, Mommsen and Niemeier have also noted several prolific production centres for this form of vessel, also traditionally associated with Samos in South Ionia.[19] Whether this association is still acceptable or not, the link with the previous analyses of pottery produced in western Asia Minor is confirmed for import A, including previous analyses of Ionian cups.

Summary of the results

The 'local' group contains two sub-groups, group 1 (4 Al Mina juglets) and group 2 (5 Syrian red slip): **Figs. 4 and 5**.

Import A contained 6 out of 7 Ionian cup fragments (group 3). The consistent compositions suggest that they were all made in the same place (in western Asia Minor); they are well separated chemically from the local pottery types.

Import B contained 7 krater fragments with ivy leaf decoration (group 4). Again all the examples of this ware are consistent in composition with each other, and distinguishable chemically from the local and import A pottery; they may have been produced in or around Miletus: **Fig. 1**.

Some of the wavy-line krater fragments, from the earlier levels, were locally manufactured. This is illustrated by the group 5 fragments that fell to the left of the line in **Diagram 1: Fig. 6**.

Other wavy-line krater fragments of group 5 belong to import B, possibly produced in or around Miletus: **Fig. 2**.

The painted amphora/hydria fragments (group 7 and 8) provided one unexpected result. The nine examples were made up from samples drawn from two registration number series: GR 1994.6-22 and GR 1995.12-26, which have been labelled in this

report as groups 7 and 8 respectively, and the analyses have shown that they differ in chemical composition. For group 8, four out of five samples have a composition consistent with local production at or near Al Mina (they fall to the left of **Diagram 1**): **Fig. 7**. The four group 7 sherds all have 'import' chemical compositions, one is like import A (**Fig. 3**, right), two import B (**Fig. 3**, left) and one like import C.

Of the three oinochoe fragments (group 6), one is consistent with import B and one with import A. The third is closely similar to the average composition of the local pottery of Miletus, as analysed by Kerschner and Mommsen *et al.* (their group A) and has been defined as import group D.

Three samples form import group C, which has an intermediate composition between import groups A and B; it consists of one Ionian cup, one oinochoe and one painted amphora.

The links so far established between the composition of the Al Mina import groups and the reference samples of pottery from western Asia Minor show the complexities of the analysis of pottery from the latter area, but also confirm the attribution of the import groups to that region.

Inductively Coupled Plasma Spectrometry

Following the success of the NAA on the Al Mina pottery, it was decided to re-test some of the samples with an alternative method of scientific analysis known as Inductively Coupled Plasma Spectrometry. In recent years the technique of Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) has been used by a number of laboratories for ceramic provenance studies; it can measure all major elements (silicon is usually omitted) in silicates.[20] The reason for applying a second type of analysis was primarily to compare the results with the NAA, to test their relative efficiencies. A crucial aspect of the comparison of NAA and ICP-AES analyses on the same sherd was that the samples analysed by both techniques should be identical; if they were not, one would have to assume a sampling error.[21] Moreover, the additional analysis allowed the testing of two further pottery types; a type of banded bowl believed to be of local manufacture (**Fig. 8**) and a type of black glazed skyphos with white painted horizontal stripes.[22]

The samples analysed by ICP-AES are indicated by an asterisk in **Table 1**; they comprise examples of local production and all four import groups as indicated by NAA.[23] The results are given in **Table 4** (at the end of this article); a star in the column heading indicates the 17 elements analysed in common with NAA.[24] **Diagram 2b** shows the contribution of the ICP elements to this PCA plot. Another PCA plot was produced from the ICP-AES data, selecting a broad range of elements to represent different parts of the periodic table.[25] Comparison of **Diagram 2a** (NAA) **and 2b** (ICP-AES) show that the actual distribution of samples in the principal components plots are very similar indeed in all features. All of the same composition sub-groups identified by NAA have reappeared in the ICP plot, and in the same relative positions. Even the small sub-group of import D appears, and the import A group (of Ionian cups) is, if anything, a tighter composition group than in the NAA diagram. The local Al Mina pottery samples and Syrian red slip show a similar spread in composition as on **Diagram 1**. It should be remembered that the elements that produced these two figures are not the same, though both include representatives from the same broad groups of the periodic table, which have very similar geochemical behaviours within a group, and are often highly correlated. Comparison of **Diagrams 2a** and **2b** shows that for the elements analysed in common by NAA and ICP, their contribution to the PCA plots is almost identical.

The results

The conclusion to be drawn from these figures is that ICP-AES analyses identify the same chemical composition groups as NAA, producing practically interchangeable results. The same conclusions as to the origin of the pottery would be drawn from both analytical datasets.

The additional test pieces were also added to the data results of the ICP-AES analysis. They show that the banded bowls (**Fig. 8**), which had previously been considered of local or Syrian manufacture, were in fact imports: GR 1995.12-25.25 fell within the same composition group as import B pottery and GR 1995.12-25.30 fell between the composition of import B and C. The black glaze skyphos fragment (GR 1994.4-18.4) is close to the composition of Ionian cups (import A), which confirms that the type is East Greek, despite the unusual fabric.

Implications of the findings

The surviving evidence suggests that during the 5th and 4th centuries BC, the merchants of Al Mina, in addition to importing Attic black glaze, were importing pottery from somewhere on the mid-western coast of Asia Minor. Woolley was quick to point out that the earlier trade in Corinthian and Attic may not necessarily have involved a trading relationship with that particular place of manufacture and that there may well have been agents or independent merchants specialising in a particular type of pottery.[26] Many of the earlier vessels from the 6th century BC are of a similar clay composition to the imports arriving over a century later. However, the similarity of the decoration, with bold bands and linear or floral patterns, as well as the clay types might imply some continuity in trading patterns.

Interestingly, there were local copies of these vessels, which are often distinguishable only by their coarser fabric. The copies were found in the same levels as the imports. Unfortunately, because Woolley believed that they were all of local manufacture, he does not mention whether they were stored within the same warehouse or rooms. This question is one of considerable importance, because the excavation reports clearly state that the rooms within individual warehouses were devoted to one particular ware.[27] The warehouses from the later levels (2–3) are the best preserved on the site and clearly indicate a developed form of import, storage and eventual sale of the goods.[28] The reports indicate that locally manufactured Al Mina juglets were found within a single room, which might suggest that they were ready for export or for transport to the inner areas of Syria.[29] It would therefore seem likely that the local copies of Greek vessels were also manufactured locally and intended for sale within Syria. Their storage at the port might imply that the journey to their intended destination would have been made by sea.

Conclusion

The scientific analysis of pottery from Al Mina has indicated that many types that were originally believed to have been locally

manufactured were in fact imported, probably from Miletus or the surrounding areas of western Asia Minor. This has provided further evidence to support Woolley's original interpretation of the port as being under the control of Greek merchants.[30] Furthermore, the ivy leaf kraters may well represent some of the last imports to Al Mina, since they are the only example for which there is no evidence of copies of either the shape or decoration. There is, however, evidence of locally manufactured copies of the smaller wavy line kraters. Of the closed vessels, there is more surviving evidence of imports than local copies. This may simply be a coincidence, but it is also possible that the imitations were cheaper and so sold more quickly to traders. The copies are of an extremely high quality and it is likely that Greek potters or their descendants manufactured them. Many are difficult to distinguish from the imports and perhaps some buyers were fooled by their appearance; after all they seem to have caused enough confusion amongst modern scholars.

Abbreviation

Woolley 1938 = C.L. Woolley, 'Excavations at Al Mina, Sueidia', *JHS* 58 (1938), 1–30.

Notes

1 The authors would like to thank Sheridan Bowman, Keeper of the Department of Conservation, Documentation and Science, British Museum, for her encouragement of the scientific work for this paper. From the Department of Greek and Roman Antiquities, they would especially like to thank Dyfri Williams, Keeper, for endorsing the analysis of the Al Mina pottery and for encouraging this particular aspect of the work; also Lucilla Burn and Louise Schofield for their help and guidance in the registration of the Al Mina material. They are especially grateful to Michael Kerschner for providing reference material of comparative studies and also for providing them with details of a forthcoming publication, and his co-authors M. Akurgal, H. Mommsen and W.-D. Niemeier for sharing their more recent results.

2 For the original excavation reports see Woolley 1938 and id., 'Excavations at Al Mina, Sueidia. II', *JHS* 58 (1938), 133–70. Also on the general question of trade and character of the site see J. Boardman, 'Tarsus, Al Mina and Greek chronology', *JHS* 85 (1965), 5–15 and id., *The Greeks Overseas* (4th edn.; London, 1999). On the pottery see J-P. Descœudres, 'Euboeans in Australia, some observations on the imitations of Corinthian kotylai made in Eretria and found in Al Mina', in: *Eretria* 6 (Berne, 1978), 7-19; G. Lehmann *Untersuchungen zur Späten Eisenzeit in Syrien und Libanon: Stratigraphie und Keramikformen zwischen ca. 720 bis 33 v. Chr.* (Münster, 1996); M. Robertson, 'The Excavations at Al Mina, Sueidia IV. The Early Greek Vases', *JHS* 75 (1955), 2–21.

3 Woolley 1938, 10.

4 Woolley 1938, 19

5 GR 1996.1-6.6 base fragment came from level 3. GR 1996.1-6.4 rim fragment came from level 4 and GR 1996.1-6.11 comprised of two joining pieces, one from levels MN2–4 the other from levels MN5–6.

6 GR 1996.6-21.16 and GR 1996.6-21.20 came from levels MN2–4; GR 1996.6-21.15 came from level MN5 and GR 1996.6-21.5 came from levels MN5–6.

7 Lehmann (n.2).

8 Woolley 1938, 24.

9 Boardman 1999 (n. 2), 53–4.

10 M.J. Hughes *et al.*, 'Neutron activation analysis procedure at the British Museum research laboratory' in: M.J. Hughes *et al.* (eds), *Neutron Activation and Plasma Emission Spectrometric Analysis in Archaeology* (British Museum Occasional Paper 82; London, 1991), 29–46.

11 The lines radiating from the centre of the figure indicate where the concentrations of those elements will be highest on **Diagram 1**. For example, pottery with higher concentrations of chromium, cobalt, scandium and iron will appear towards the top of **Diagram 1**.

12 A.J. Boas, *A Provenance Study of some Fine Tablewares Imported into the Latin Kingdom of Jerusalem* Unpublished Thesis, Hebrew University Jerusalem (1991).

13 M.J. Hughes *et al.,* 'The analysis of pottery lamps mainly from Western Anatolia, including Ephesus, by neutron activation analysis', in: D.M. Bailey, *Catalogue of Lamps in the British Museum* Vol. 3, *Roman Provincial Lamps* (1988), 461–85, and M. Kerschner, H. Mommsen, T. Beier, D. Heimermann and A. Hein, 'Neutron activation analysis of bird bowls and related archaic ceramics from Miletus', *Archaeometry* 35.2 (1993), 197–210

14 Boas (n. 12), 210 table 4.

15 Kerschner *et al.* (n. 13).

16 M. Akurgal, M. Kerschner , H. Mommsen and W-D. Niemeier, *Töpferzentren der Ostägäis. Archäometrische und archäologische Untersuchungen zur mykenischen, geometrischen und archaischen Keramik aus Fundorten in Westkleinasien* (3. Ergänzungsheft der Österreichischen Jahreshefte; Vienna, 2002) have now confirmed the allocation of groups A and D to Milesian workshops. The authors are extremely grateful to Michael Kerschner for providing them with this information prior to the publication of the volume.

17 Kerschner *et al.* (n. 13), 204.

18 Hughes *et al.* (n. 13), 461–85.

19 Hughes *et al.* (n. 13), 474–5; P. Dupont, 'Trafics méditerranéens archaïques: quelques aspects', in: F. Krinzinger (ed.), *Die Ägäis und das westliche Mittelmeer. Beziehungen und Wechselwirkungen 8. bis 5 Jh. V. Chr.*, Akten des Symposions Wien 24–27. März 1999 (Archäologische Forschungen 4, Österr. Akademie der Wissenschaften Philosophisch-historische Klasse Denkschriften 288; Vienna, 2000), 445–60, esp. 451ff. and 548; Akurgal *et al.* (n. 16).

20 H. Hatcher *et al.*, 'A comparison of inductively-coupled plasma emission spectrometry and atomic absorption spectrometry on standard reference and silicate materials and ceramics', *Archaeometry* 37.1 (1995), 83–94.

21 Since the material for analysis is not homogenised to the same degree as standard reference materials (e.g. from the National Institute for Standards and Testing, Washington) there has to be a small allowance in the comparison of results for a sampling error. However, this should not be more than perhaps a few percent given the sample technique.

22 Banded bowls GR 1995.12-25.25 (BMLR 6977-46-K) and GR 1995.12-25.30 (BMLR 6977-47-M) and black-glazed skyphos GR 1994.4-18.4 (BMLR 6977-48-P). Following a discussion with Michael Kerschner we decided to test this type of skyphos, for which there was no immediately obvious East Greek parallel. The bowls are included in Lehmann (n. 1), pl. 25 no. 156/1-4; they are of a similar fabric to the ivy leaf kraters (Munsell 5YR 7/6), which Lehman also concludes are of a local fabric (pl. 37 no. 208/1-2).

23 The produced samples were analysed at the Department of Geology, Royal Holloway College.

24 A comparison of the analysis results on the same sample by both methods was made using a paired t-test, J.C. Miller and J.N. Miller, *Statistics for Analytical Chemistry* (3rd edn; London, 1993), 58–9, in which the pairs of results by both methods for each element in each sample are tested for significant differences. The differences are explored by regression analysis, which showed that there was a linear relationship. For the Al Mina pottery the linear relationship between the two sets of analyses indicates that systematic differences in composition between groups of pottery analysed by one method will also be detected as differences the other. For provenance studies, it is mainly differences by compositions that are important. A more detailed comparison of the accuracy and precision of the data from the two analysis methods on these samples will be published elsewhere, including the implications for ceramic provenance studies.

25 It is apparent that the elements which contribute strongly to the first principal component are the rare earths and to the second are iron, scandium, cobalt and chromium. The pattern of elements on **Diagram 2** can be seen to be related to their position in the periodic table. Thus all of the rare earth elements (lanthanum, cerium, samarium, europium, lutetium and ytterbium) behaved similarly, as did the transitional metals (iron, chromium and cobalt) and the alkalis (caesium and potassium).

26 Woolley 1938.

27 Woolley 1938, 12.

28 Woolley 1938, 12–3 and Boardman 1999 (n. 2), 53 fig. 21, for the type of warehouse.

29 Woolley 1938, 12.

30 Woolley 1938, 15–6 where he concludes that the handling of trade can hardly have been done by others than Greeks or Levantines of Greek origins. Given that there was clearly a trade of local copies of Greek vessels, it would seem that the latter was more likely.

Table 2 Neutron activation analysis results on pottery from Al Mina

BMRL	Group	Na	K	Rb	Cs	Ca	Sc	Fe	Cr	Co	Ni	Zn	La	Ce	Nd	Sm	Eu	Yb	Lu	Hf	Th	U	Ba	Ta	Tb	Zr	As	Sb
local juglets																												
6977-9-L	1	0.69	2.27	95	5.42	14.3	16.5	4.30	353	27.5	105	98	24.7	46.1	21.7	4.80	0.98	2.02	0.30	3.25	9.4	2.7	290	0.65			14.4	1.6
6977-10-X	1	0.77	2.52	84	6.04	13.4	16.5	4.36	292	26.2	93	100	24.9	49.5	21.6	4.95	1.12	2.22	0.31	3.49	9.3	2.0	277	0.88	1.17		16.9	1.6
6977-11-K	1	0.66	2.24	65	3.66	14.7	13.7	3.60	299	22.6	79	79	21.2	42.3	20.6	4.30	1.11	1.98	0.31	2.72	7.9	2.0	249	0.60	0.66		58.8	2.3
6977-12-M	1	0.84	2.58	72	4.01	11.2	15.4	4.21	322	27.1	86	100	22.4	43.5	17.8	4.35	1.13	1.88	0.30	2.86	8.8	1.9	270	0.75			23.4	1.8
local red slip																												
6977-31-W	2	0.88	1.81	63	3.32	13.3	16.5	4.32	383	30.6	97	82	20.0	42.7	21.5	4.38	1.12	2.11	0.33	3.11	6.6	1.6	342	0.81	1.32		12.9	1.1
6977-32-Y	2	0.36	1.21	24	0.82	26.8	6.8	2.16	83	9.0		50	18.1	37.0	16.5	3.98	0.98	1.60	0.24	3.21	4.5	2.1	341	0.60	0.86		12.4	0.8
6977-33-L	2	0.09	0.66			11.2	4.8	1.16	73	6.8	27	28	13.0	14.6	8.9	2.46	0.66	1.29	0.22	0.66	2.0	1.7	180		0.34		14.4	0.6
6977-34-N	2	0.90	1.54	40	2.35	15.1	14.3	3.88	553	26.8	119		15.6	28.6	10.9	3.50	0.90	1.91	0.31	2.28	4.8	1.9					13.5	1.0
6977-35-Q	2	0.94	1.64	51	2.14	13.4	15.2	4.14	518	28.9	140	43	16.2	28.5	11.6	3.58	0.87	1.57	0.28	2.31	4.6	1.7	199	0.48			14.6	1.0
Ionian cups																												
6977-24-Y	3	0.65	2.60	133	15.39	9.1	18.3	4.92	325	30.4	114	109	38.3	74.9	34.9	7.12	1.49	3.23	0.49	6.20	16.4	2.8	387	1.22	1.06	219	31.2	2.8
6977-25-L	3	0.49	3.00	158	20.95	7.3	21.4	5.89	341	34.8	83	82	39.4	70.3	25.9	7.29	1.49	3.23	0.51	4.86	18.5	3.4	337	1.25	0.89		23.6	3.3
6977-26-N	3	0.63	3.00	163	10.63	5.7	24.1	6.49	431	41.7	137	72	38.8	70.8	27.4	7.50	1.71	3.12	0.51	4.96	16.9	3.3	354	1.44	1.09		40.9	3.4
6977-27-Q	3	0.61	2.57	150	10.41	6.5	22.2	6.02	413	41.5	138	83	38.4	76.3	29.8	7.57	1.59	3.22	0.54	5.92	15.1	3.5	377	1.31	1.06		13.3	3.2
6977-28-T	3	0.54	2.79	169	12.89	6.6	23.1	6.41	404	41.6	144	141	37.6	78.6	37.1	7.38	1.68	3.09	0.51	5.72	15.5	2.4	406	1.15	1.16		21.1	5.2
6977-29-X	3	0.54	2.93	167	10.73	8.0	24.2	6.62	416	38.1	140	134	37.9	81.2	39.0	7.51	1.67	3.40	0.55	5.79	16.5	3.5	426	1.15	2.15		24.1	3.1
6977-30-R	3	0.61	2.84	161	18.75	5.4	22.4	6.05	448	37.8	115	121	36.9	77.3	37.6	7.09	1.76	3.32	0.50	6.02	14.9	3.1	428	1.22		267	21.9	3.0
krater fragments with ivy leaf																												
6977-17-L	4	0.60	3.10	166	9.94	6.3	15.9	4.35	106	18.5	50	104	39.6	81.6	35.6	7.48	1.37	2.76	0.42	5.43	15.6	3.0	386	1.32	1.24		10.9	1.8
6977-18-N	4	1.03	2.05	96	8.87	11.1	15.2	4.20	104	17.3	18	83	37.9	75.5	31.7	7.23	1.38	2.68	0.39	4.58	14.2	3.4	335	1.23	1.00		12.9	2.3
6977-19-Q	4	0.58	2.80	157	7.93	7.3	14.9	4.09	105	16.1	36	81	36.0	73.3	33.2	6.83	1.32	2.75	0.40	4.87	14.4	3.0	412	1.12	1.02		9.8	2.6
6977-20-M	4	1.06	1.96	88	8.86	10.4	14.9	4.13	108	16.8	25	81	36.2	71.9	30.4	6.69	1.35	2.63	0.39	4.53	13.9	3.1	327	1.05	1.04		6.2	1.9
6977-21-P	4	0.65	2.96	167	7.98	8.3	15.8	4.29	118	19.7		91	37.5	79.6	35.0	7.00	1.55	2.76	0.41	4.98	14.7	3.2	386	1.38	1.11		10.8	2.3
6977-22-R	4	0.57	2.58	133	6.74	6.1	14.6	4.06	97	26.4	41	89	34.0	73.3	32.4	6.61	1.42	2.47	0.40	4.69	13.9	2.9	387	1.06	1.06		12.5	1.9
6977-23-W	4	0.61	3.32	175	10.18	5.7	16.3	4.53	113	22.4	30	97	38.9	81.0	31.0	7.18	1.24	2.72	0.45	5.00	15.9	3.4	351	1.18	1.22		11.5	2.1

Table 2 (cont.) Neutron activation analysis results on pottery from Al Mina

BMRL	Group	Na	K	Rb	Cs	Ca	Sc	Fe	Cr	Co	Ni	Zn	La	Ce	Nd	Sm	Eu	Yb	Lu	Hf	Th	U	Ba	Ta	Tb	Zr	As	Sb
krater fragments with wavy line																												
6977-36-T	5	0.61	1.36	50	2.79	8.2	13.7	3.96	856	30.6	184	63	12.2	27.0	12.0	2.82	0.78	1.33	0.22	2.16	4.5	1.3	173				8.5	1.1
6977-37-X	5	0.60	3.11	161	8.97	6.5	16.1	4.51	135	20.2	41	104	36.8	78.1	38.4	6.83	1.43	2.72	0.40	5.03	14.9	3.1	384	1.15	0.69		12.8	2.3
6977-38-K	5	0.70	3.31	176	10.37	4.8	17.1	4.75	129	23.6		108	37.8	85.2	41.3	7.02	1.65	2.70	0.45	5.49	15.8	3.0	400	1.04	1.21		6.3	2.1
6977-39-M	5	0.70	3.39	177	10.30	5.8	15.9	4.50	115	20.9	19	87	39.3	77.7	33.3	7.71	1.50	2.60	0.44	4.70	15.6	3.0	378	1.06	0.95		11.7	2.2
6977-40-Y	5	0.68	3.35	173	9.97	5.8	16.4	4.52	113	19.3	35	100	38.3	76.2	36.2	7.55	1.51	2.69	0.42	5.24	15.7	2.7	439	1.12	1.25	241	7.6	2.4
6977-41-L	5	0.60	3.40	185	10.45	4.6	16.4	4.64	112	18.8	29	88	37.2	77.7	32.3	7.28	1.28	2.51	0.40	5.27	15.7	2.8	412	1.24	0.96		9.8	1.8
6977-42-N	5	0.84	2.43	100	5.21	9.0	18.0	4.85	363	29.1	114	96	24.1	55.9	24.4	5.41	1.29	1.92	0.31	3.71	9.3	2.2	259	0.88	0.80		20.7	1.1
6977-43-Q	5	0.67	3.25	177	9.80	5.8	16.7	4.65	122	20.3		97	38.1	81.6	32.7	7.59	1.50	2.61	0.46	5.31	16.1	3.4	420	1.32	1.13		8.9	2.3
6977-44-T	5	0.94	2.38	92	6.61	11.2	18.0	4.76	378	29.7	133	82	25.3	53.7	24.1	5.13	1.28	1.91	0.31	3.31	11.2	2.3	344	0.69			15.9	1.9
6977-45-X	5	0.80	2.34	76	4.45	10.9	19.1	5.08	373	38.4	139	95	20.9	46.9	21.1	4.71	1.23	2.07	0.36	3.51	8.0	2.1		0.64			16.7	1.9
oinochoai																												
6977-2-X	6	1.15	3.80	219	10.58	4.9	13.6	4.43	186	24.5	67	78	52.9	104.5	45.0	9.76	1.68	3.82	0.48	5.38	24.7	3.7	460	1.51	2.01		23.7	2.4
6977-3-K	6	0.79	2.98	156	8.92	8.8	16.3	4.52	114	19.3		103	39.7	76.9	32.8	7.51	1.46	2.84	0.43	4.80	15.2	3.3	389	1.14	1.16		3.9	1.9
6977-8-Y	6	0.91	3.93	176	10.63		21.9	5.66	189	25.0	58	117	39.4	78.9	33.4	7.82	1.49	3.07	0.45	4.50	15.5	2.7	593	1.25	1.18		33.6	3.4
Painted amphora/hydria (reg.no. 1994,6-22,..)																												
6977-4-M	7	0.53	3.37	160	8.01	5.8	16.0	4.39	109	18.6		102	39.6	78.4	28.4	7.57	1.38	2.97	0.46	4.84	14.5	3.9	387	1.06	1.05		19.4	2.1
6977-5-P	7	0.67	3.28	175	9.86	7.4	17.4	4.71	118	27.3		102	40.9	84.1	34.5	7.58	1.56	2.81	0.45	5.34	15.7	3.5	381	1.08	1.17		10.5	2.4
6977-13-P	7	0.51	2.73	153	9.82	8.7	23.0	6.41	393	36.9	145	142	36.9	75.9	37.7	7.36	1.71	3.31	0.51	5.44	14.6	2.8	366	1.07	0.97		18.8	3.6
6977-14-R	7	1.08	3.72	182	10.57	3.9	22.2	5.60	189	25.7	60	120	40.4	84.1	35.8	7.99	1.83	3.07	0.49	4.46	16.5	2.2	632	1.35	0.98	181	9.6	3.8
Painted amphora/hydria (reg.no. 1995,12-26,..)																												
6977-1-T	8	0.61	3.55	161	8.65	5.6	16.0	4.59	122	17.3		101	38.6	79.7	30.5	6.95	1.37	2.55	0.36	5.21	14.7	2.9	373	0.94	1.09	181	18.1	1.6
6977-6-R	8	0.85	2.55	107	5.80	8.2	18.6	5.14	390	30.1	81	104	27.7	60.2	26.4	5.74	1.25	2.40	0.36	3.80	9.3	1.9	253	0.78	0.96		9.2	1.9
6977-7-W	8	0.66	2.3	76	4.10	9.7	16.8	4.69	387	25.7	148	121	25.1	57.8	21.7	5.48	1.29	2.32	0.36	3.53	9.1	1.9	276	0.89			13.0	2.0
6977-15-W	8	0.83	2.14	94	6.21	9.6	16.3	4.38	342	25.4	111	86	24.1	47.4	21.4	4.62	1.08	1.79	0.27	3.22	9.7	1.8	304		0.73		12.0	1.6
6977-16-Y	8	0.83	2.50	109	5.45	8.7	18.3	5.21	456	29.2	128	117	25.8	57.4	28.6	5.49	1.20	2.25	0.34	3.99	9.8	1.5	313	0.89			10.1	2.0

element symbols: Na sodium; K potassium; Rb rubidium; Cs caesium; Ca calcium; Sc scandium; Fe iron; Cr chromium; Co cobalt; Ni nickel; Zn zinc; La lanthanum; Ce cerium; Nd neodymium; Sm samarium; Eu europium; Yb ytterbium; Lu lutetium; Hf hafnium; Th thorium; U uranium; Tb terbium; Ta tantalum; Zr zircnium; Ba barium; As arsenic; Sb antimony

Table 3 Summary table of neutron actrivation analysis results on local and import groups of pttery from Al Mina

	Na	K	Rb	Cs	Ca	Sc	Fe	Cr	Co	Ni	Zn	La	Ce	Nd	Sm	Eu	Yb	Lu	Hf	Th	U	Ba	Ta	Tb	As	Sb
local juglets																										
m	0.74	2.40	79	4.8	13.4	15.5	4.12	316	25.9	91	94	23.3	45.3	20.4	4.60	1.09	2.03	0.305	3.08	8.9	2.15	272	0.72	0.92	28	1.8
s.d.	0.08	0.18	13	1.1	1.5	1.3	0.35	28	2.3	11	10	1.8	3.2	1.8	0.32	0.07	0.14	0.007	0.35	0.7	0.33	17	0.12	0.36	21	0.4
local red slip																										
m	0.91	1.67	51	2.6	14.0	15.3	4.11	485	28.8	119	62	17.3	33.3	14.7	3.82	0.96	1.86	0.307	2.57	5.3	1.70	271	0.65	1.32	14	1.1
s.d.	0.03	0.07	8	0.1	1.2	0.6	0.18	25	1.5	15		0.4	0.1	0.5	0.06	0.02	0.24	0.020	0.02	0.2	0.14				1	0.0
import A																										
m	0.57	2.85	161	14.1	6.6	22.9	6.25	409	39.3	126	105	38.2	75.8	32.8	7.39	1.65	3.23	0.521	5.54	16.2	3.18	388	1.25	1.27	24	3.5
s.d.	0.05	0.16	7	4.6	1.0	1.1	0.30	37	2.8	24	30	0.9	4.4	5.7	0.18	0.09	0.12	0.021	0.50	1.4	0.40	38	0.11	0.50	9	0.8
import B																										
m	0.71	2.93	152	9.0	7.0	16.0	4.43	131	20.7	40	93	36.6	76.3	33.4	7.03	1.42	2.61	0.409	4.92	14.7	3.01	377	1.15	1.05	11	2.1
s.d.	0.16	0.50	34	1.5	2.0	0.9	0.25	67	3.7	26	9	3.9	7.0	4.0	0.58	0.12	0.22	0.038	0.47	1.7	0.32	46	0.14	0.17	4	0.4
import C																										
m	1.00	3.83	179	10.6	3.9	22.1	5.63	189	25.3	59	118	39.9	81.5	34.6	7.91	1.66	3.07	0.466	4.48	16.0	2.46	613	1.30	1.08	22	3.6
s.d.	0.12	0.15	5	0.0		0.2	0.04	0	0.4	2	3	0.7	3.7	1.7	0.12	0.23	0.00	0.027	0.03	0.7	0.39	28	0.07	0.14	17	0.3
import D:																										
6977-2-X	1.15	3.80	219	10.6	4.9	13.6	4.43	186	24.5	67	78	52.9	104	45.0	9.76	1.68	3.82	0.48	5.38	24.7	3.7	460	1.51	2.01	24	2.4

m: mean concentration for the group; s.d.: one standard deviation

element symbols: Na sodium; K potassium; Rb rubidium; Cs caesium; Ca calcium; Sc scandium; Fe iron; Cr chromium; Co cobalt; Ni nickel; Zn zinc; La lanthanum; Ce cerium; Nd neodymium; Sm samarium; Eu europium; Yb ytterbium; Lu lutetium; Hf hafnium; Th thorium; U uranium; Tb terbium; Ta tantalum; Ba barium; As arsenic; Sb antimony

Table 4 Inductively-coupled plasma atomic emission spectrometry (ICP-AES) analyses of pottery from Al Mina

BMRL no.	Al2O3	Fe2O3*	MgO	CaO*	Na2O*	K2O*	TiO2	P2O5	MnO	Ba	Co*	Cr*	Cu	Li	Nb*	Ni*	Sc*	Sr	V	Y	Zn*	Zr	La*	Ce*	Nd*	Sm*	Eu*	Dy*	Yb*
6977-11-K	10.33	5.41	3.95	16.97	0.79	2.19	0.52	0.20	0.09	238	26	163	55	36	8	201	14	602	102	18	77	48	16	33	15	1.5	0.7	1.7	1.2
6977-12-M	10.88	6.10	5.35	12.79	0.93	2.40	0.55	0.21	0.09	234	28	202	69	33	9	238	14	368	105	17	78	47	22	36	15	1.7	0.7	1.6	1.1
6977-15-W	12.62	7.07	5.96	13.71	1.08	2.49	0.64	0.34	0.11	267	31	283	48	47	11	269	17	373	117	20	92	50	25	44	22	3.9	0.9	2.5	1.4
6977-16-Y	13.55	7.94	6.23	9.57	1.02	2.71	0.66	0.28	0.12	276	30	266	76	50	12	259	18	267	125	22	109	52	32	52	23	3.5	0.9	2.5	1.5
6977-31-W	10.60	6.12	5.13	15.70	0.98	1.86	0.59	0.31	0.13	281	31	243	41	28	9	246	15	384	104	19	76	39	16	32	16	3.3	0.8	2.2	1.2
6977-32-Y	5.48	3.04	0.91	34.97	0.45	1.36	0.40	0.28	0.06	315	18	74	21	13	5	38	7	717	61	22	50	26	3	5	2	0.6	0.3	1.2	0.8
6977-33-L	6.49	3.27	1.71	27.38	0.21	1.32	0.26	0.68	0.12	329	22	130	55	10	5	137	9	672	78	41	82	34	3	10	8	1.1	0.6	2.7	2.0
6977-34-N	9.54	5.87	6.58	18.66	1.14	1.86	0.55	0.32	0.10	226	30	301	39	44	6	327	14	470	100	17	72	32	9	23	9	0.9	0.6	1.3	1.0
6977-35-Q	9.92	6.28	6.03	15.76	1.10	1.77	0.59	0.28	0.11	218	30	334	40	27	8	346	15	400	109	18	68	37	14	25	12	1.2	0.7	1.6	1.2
6977-36-T	10.43	7.43	9.64	13.40	0.93	1.83	0.52	0.31	0.11	213	40	558	48	37	8	547	17	363	104	17	82	40	17	26	12	1.4	0.7	1.5	1.1
6977-42-N	12.67	7.23	6.10	10.90	0.95	2.43	0.61	0.37	0.11	263	31	229	66	51	12	228	18	310	133	21	97	49	29	48	22	3.7	0.9	2.5	1.5
6977-44-T	13.30	7.32	5.08	13.23	1.11	2.44	0.68	0.32	0.10	287	31	278	44	41	11	271	19	379	126	21	83	60	28	43	20	2.6	0.9	2.2	1.5
6977-6-R	13.53	7.68	6.64	9.89	0.97	2.63	0.68	0.22	0.09	226	31	203	73	56	13	220	18	236	119	20	104	50	31	52	24	4.9	1.0	2.8	1.4
6977-7-W	12.26	7.07	6.39	9.35	0.75	2.24	0.60	0.28	0.10	247	28	273	76	36	11	306	16	267	116	20	111	48	30	48	19	2.9	0.8	2.2	1.3
6977-9-L	11.69	6.43	5.79	15.96	0.75	2.20	0.58	0.20	0.12	256	31	224	64	48	11	247	16	419	105	19	89	51	20	39	19	3.6	0.7	2.2	1.2
6977-13-P	18.05	9.55	4.98	9.28	0.61	2.88	0.88	0.25	0.13	361	35	341	163	80	16	323	22	216	155	26	128	34	43	67	34	5.4	1.2	3.3	1.9
6977-27-Q	18.03	9.07	3.91	7.82	0.77	2.87	0.94	0.25	0.14	354	38	290	63	85	17	309	22	185	165	27	109	43	46	74	33	6.8	1.3	3.6	1.9
6977-28-T	18.06	9.54	5.28	8.31	0.66	3.00	0.90	0.27	0.14	348	38	279	64	89	16	339	22	212	155	28	111	37	43	68	31	5.1	1.2	3.2	1.9
6977-29-X	19.42	9.87	3.82	7.42	0.69	3.11	0.93	0.29	0.14	412	35	317	66	88	16	314	25	212	171	27	110	31	45	69	33	5.2	1.2	3.1	1.9
6977-30-R	16.71	9.07	4.40	6.08	0.73	2.83	0.90	0.32	0.12	397	35	365	64	81	16	304	21	227	154	25	112	35	43	65	32	5.6	1.2	3.3	1.9
6977-17-L	15.91	6.69	3.27	6.72	0.73	3.29	0.76	0.25	0.08	371	22	98	45	58	16	79	15	246	110	24	93	74	44	72	34	6.1	1.1	3.0	1.7
6977-1-T	14.72	6.49	3.09	7.25	0.67	3.42	0.71	0.31	0.07	332	20	101	38	53	15	91	14	272	119	22	92	64	42	68	32	6.0	0.9	2.9	1.6
6977-18-N	15.92	6.23	5.97	12.38	1.24	2.10	0.69	0.21	0.07	293	22	91	36	48	14	62	15	443	122	28	82	87	37	65	31	4.2	1.0	3.1	2.1
6977-19-Q	16.09	6.37	4.77	8.24	0.72	3.15	0.69	0.23	0.07	389	20	73	40	55	14	81	15	309	100	20	85	56	42	66	33	4.3	0.9	2.3	1.4
6977-20-M	16.49	6.43	6.12	12.86	1.33	2.13	0.71	0.22	0.07	302	23	88	58	50	14	62	16	463	125	28	84	86	37	68	29	5.0	1.0	3.3	2.1
6977-22-R	15.26	6.21	4.78	7.83	0.70	2.83	0.65	0.24	0.07	328	27	88	39	47	14	105	15	283	109	22	88	61	44	70	34	5.4	1.0	2.7	1.6
6977-23-W	17.91	7.30	4.91	7.22	0.79	3.67	0.80	0.23	0.07	351	25	104	50	63	16	72	17	315	130	23	97	63	47	75	33	5.3	1.1	2.7	1.7
6977-37-X	17.12	7.11	3.01	6.88	0.74	3.44	0.76	0.27	0.08	381	23	89	41	60	16	73	16	344	122	21	93	60	46	74	33	5.3	1.0	2.7	1.5
6977-38-K	16.87	6.98	3.33	5.84	0.82	3.43	0.76	0.22	0.07	352	24	102	36	61	16	74	17	241	114	20	93	52	45	74	31	6.3	1.1	2.9	1.4
6977-39-M	17.27	7.05	3.79	7.45	0.79	3.41	0.76	0.23	0.07	341	23	82	37	60	15	63	16	275	117	23	92	59	44	72	33	5.2	1.0	2.8	1.6
6977-4-M	16.54	6.83	3.36	7.50	0.62	3.39	0.73	0.36	0.07	352	22	103	37	54	16	73	16	348	127	23	96	60	44	73	33	6.6	1.1	3.1	1.5
6977-40-Y	15.94	6.89	3.67	8.12	0.78	3.38	0.75	0.27	0.07	364	23	81	39	56	16	68	16	295	107	22	92	59	45	74	36	5.7	1.1	2.9	1.6
6977-41-L	17.58	7.15	3.20	5.88	0.74	3.65	0.76	0.25	0.07	369	20	99	50	61	16	78	16	235	124	23	91	71	47	76	34	4.9	1.0	2.6	1.6
6977-43-Q	17.25	6.99	3.85	7.21	0.80	3.48	0.76	0.22	0.07	365	22	81	42	60	15	67	16	290	113	22	93	55	46	74	34	5.1	1.0	2.5	1.4
6977-5-P	18.36	7.26	3.57	8.23	0.83	3.59	0.79	0.23	0.08	355	32	85	42	65	16	65	18	377	127	28	98	68	46	78	36	6.7	1.2	3.5	2.0
6977-14-R	18.03	8.17	2.57	4.64	1.22	3.60	0.86	0.20	0.12	590	24	165	40	60	14	122	21	87	138	17	106	18	41	64	29	4.8	1.1	1.9	1.2
6977-24-Y	15.95	7.63	3.40	10.52	0.79	2.75	0.75	0.26	0.14	372	31	279	54	70	16	241	18	237	137	26	92	53	42	68	31	5.2	1.1	3.0	1.9
6977-2-X	17.94	7.18	4.26	6.78	1.37	4.18	0.69	0.29	0.09	498	28	160	31	67	19	186	15	264	93	42	84	57	57	96	41	8.2	1.3	5.7	2.7
6977-46-K	16.21	6.78	3.01	6.44	0.72	3.37	0.71	0.25	0.08	351	20	96	45	55	16	81	15	230	123	22	100	63	44	73	33	6.5	1.1	3.0	1.7
6977-47-M	19.18	7.71	3.66	6.00	0.77	3.72	0.84	0.25	0.08	359	37	90	39	72	18	72	19	289	145	26	103	68	49	80	34	6.9	1.1	3.4	1.8
6977-48-P	19.35	10.13	4.19	6.21	0.62	3.26	0.97	0.26	0.13	394	42	296	69	91	18	346	24	163	170	28	116	35	46	73	31	7.0	1.3	3.7	1.9

The major elements (those shown as oxides) are expressed in weight percent; the rest of the elements are given in parts per million.

From Phokaia to Persepolis

East Greek, Lydian and Achaemenid Jewellery

Dyfri Williams

I. The Phokaia group

The starting point for this paper is a small group of jewellery, largely unpublished, and now in the British Museum. It is said to be from Phokaia, modern Foça not far from Smyrna, on the west coast of Asia Minor.[1] Phokaia was the most northerly of the Ionian Greek settlements, on the border between Aeolis and Ionia, and was founded in the 9th century BC on land reportedly ceded by Kyme.[2] This group is considered here not because it contains any particular masterpieces of ancient jewellery, but because it serves as a gateway to a number of paths of research that criss-cross the cultures of ancient Anatolia.

The group is known to us from a letter written by Alfred Lawson to Augustus Wollaston Franks in 1892. Lawson was Director of the Ottoman Bank at Smyrna and had sold the British Museum part of the famous treasure of Greek jewellery from nearby Kyme in Aeolis in the 1870s.[3] Franks was the first Keeper of British and Medieval Antiquities and Ethnography but he was also an avid collector, who formed a collection of his own as well as making outstanding purchases for the Museum, sometimes subsidised with his own resources.[4] After his death in 1897, his substantial personal collection, which included a large amount of Greek and Roman jewellery, was bequeathed to the British Museum. The letter reads as follows:

> Dear Mr. Franks,
> It is but seldom that I have an opportunity of adding anything of interest to your collection, but I have lately been fortunate enough to secure some few articles of jewellery from the site of Phokaia, which I am sending to you today per letter post, registered. These include an incomplete necklace of a charming and original pattern in filigree, one of plain beads attached to piping, and a number of small discs of gold leaf with stamped faces – In the same tomb a massive gold ring was found bearing an engraved figure incuse, of a draped female standing by a tomb, on which an eagle is resting – I believe that rings of this description have never been found in our vicinity. Since obtaining these things I have heard of further discoveries, but have not yet obtained particulars, as the natives often hide their trouvailles for two or three years before attempting to sell… .[5]

This letter also contained a list of the objects, which enables us now to identify all the items.[6] The Greek ring described by Lawson is well known (**Fig. 1**).[7] The bezel is engraved with the figure of a woman at an altar on which is perched an eagle. She wears a chiton, himation, sandals and simple droplet earring. She holds out in one hand a small piece of incense, which she is presumably about to drop onto the altar. John Boardman has attributed this ring to his Salting Group, a group that contains pieces from a number of different proveniences, including Italy and Greece, as well as Asia Minor.[8] Although rings, unlike other pieces of jewellery, may often have travelled far from their place of manufacture, Boardman's Group seems to indicate contemporaneity rather than stylistic cohesion.

The more substantially preserved necklace was published by Marshall in his fundamental catalogue of the Greek and Roman jewellery in the British Museum, but it is a pastiche (**Fig. 2**).[9] It is made up from three distinct elements. There are 12 single corrugated tubes of sheet gold, in the centre of each of which is soldered a myrtle seed pod. There are also four double tubes that have a rosette attached at one end. The final element is an earring pendant in the form of a miniature figure of Eros, shown in the middle of the necklace in the illustration in Marshall's catalogue.

The single tubes with myrtle seeds below may be paralleled by a string of 14 such beads excavated at the beginning of the 20th century at Sardis, the capital of Lydia.[10] A further nine pieces were acquired by the Brooklyn Museum in 1971.[11] A string of similar beads on tubes, but without the tiny myrtle 'rosette' underneath, was also found at Sardis together with a pair of earrings.[12] These earrings are of an Achaemenid type also found at Nymphaion on the northern Black Sea coast, where they were in a tomb dateable after 430 BC on the basis of an Athenian red-figure askos.[13] Among the material in Brooklyn there is also a string of myrtle seed beads with simple rings at the top rather than tubes.[14] This related type has also been found at Iasos in Caria and on Rhodes in mid-4th-century BC contexts.[15]

It is unlikely, of course, that the double tubes with rosettes (three are eight petalled, one seven petalled) come from the same necklace as the single tubes with myrtle buds, although both are from the same cultural milieu. The double tube elements recall three necklaces from Cyprus and a related piece from Nymphaion in the northern Black Sea, all to be dated to the last quarter of the 5th century BC.[16] Nevertheless, the unexpected way that the decoration is attached to one end of the unit, rather than

Figure 1 Engraved gold ring, from Phokaia: British Museum GR 1917.6-1.59 (*BM Cat Rings* 59)

Figure 2 Pastiche gold necklace, from Phokaia: British Museum GR 1917.6-1.2694 (*BM Cat Jewellery* 2694)

the centre recalls the arrangement on an unusual ornament from the so-called 'Lydian Treasure', to which we shall turn in more detail later.[17]

The Eros pendant, the final element of this pastiche, however, is not only alien because it comes from an earring but also because it is Hellenistic in date.[18] The miniature figure is cut from a thin sheet of gold. He has long hair and smallish wings; a plain chlamys, made from a separate sheet of gold, is draped over his forearms and in his left hand he holds a tiny disc decorated in relief with a comic mask. The motif of Eros holding a mask is known from a number of other earrings, one from a 3rd century BC context in the Crimea, and this is probably the date of the Phokaian Eros pendant.[19]

The 'incomplete' necklace described by Lawson as being 'of a charming and original pattern in filigree' is previously unpublished (**Colour Plate 1**).[20] It is a most unusual piece and, as preserved, consists of one triangular terminal and six rectangular sections. The terminal is decorated with filigree spirals and tendrils. At the end of the short sides are two tiny circles of wire that would have been filed with enamel; at the point is a four-petalled rosette. The rectangular plaques are each mounted with three rosettes set in a trough and with three pendant triangles lined with beaded and plain wire and ending in a granule. Each rosette has eight petals filled alternately with green and blue enamel. On the back of both plaques and terminal are two tubes for threading cords.

One wonders what the concept in the designer's mind was. Did he think to recreate a strap necklace with pendants in a more rigid form? Or was he rather imitating some local design? The latter solution is perhaps supported by the presence in the group

Figure 3 Gold necklace droplet from Phokaia (centre) , joined to a necklace in New York: British Museum GR 1899.12-1.35, photographed with part of Metropolitan Museum of Art GR 99.24

of the Lydian tube and myrtle seed type of necklace and, more tangibly, by the three elements of a silver necklace from the Lydian Treasure, which have an upper tubular section with vertical striations and three triangles below.[21] Similar single elements, in gold, are also known from the Mausoleum at Halikarnassos and from an unstratified context in Hogarth's excavations at Ephesus.[22] The connection between the Phokaia necklace and the Lydian and Carian pieces is an important observation, for we seem to be seeing here a Greek jeweller creating a new and unusual form to match a type known from his neighbours or hosts.

The smallest element from the Phokaia group is a tiny gold, seed-like droplet (**Fig. 3,** centre).[23] It is decorated with an impressed zigzag on its upper section, in the groove of which are laid at each apex a tiny grain of gold. This type of pendant is, of course, well known from necklaces and earrings of the second half of the 4th century BC, from Greece, the Bosporan region and South Italy. But the closest parallels for the decoration come from the East Greek region. Indeed, the droplet is so close to those on the necklace in New York (**Fig. 4**), bought in 1899 from O. A. van Lennep, the Dutch Consul in Smyrna, that, when one remembers Lawson's particularly tantalising mention of the existence of more finds from the same area and that van Lennep and Lawson seem to have been rival dealers in the Smyrna of the day, one begins to wonder if Lawson's droplet might, in fact, belong to the necklace that van Lennep had.[24] I tested this suspicion in New York by setting the London droplet against the New York necklace. First of all it was clear that the London piece matched exactly many of the droplets on the New York necklace and secondly I noticed that in one place there was preserved the tiny ring that was once soldered to the top of just such a droplet as the London example (see **Fig. 3**). Richard Stone and Mark Wypyski of the Metropolitan Museum of Art's Conservation Department very kindly analysed the tiny area of solder on the bottom of the New York ring and that on top of the London droplet – the result was an exact match.[25] The London droplet must come from the New York necklace, to which it in turn now gives a find-spot.

The Phokaia series of gold discs for sewing onto clothing show lion heads, gorgoneia, and female faces in three-quarter view with flowing hair (**Fig. 5**).[26] Such clothing discs or spangles are particularly well known in East Greece and the idea is no doubt ultimately oriental in origin. Indeed, we seem to hear of such appliqués in the inventory of the sanctuary of Artemis

Figure 4 Gold necklace: New York, Metropolitan Museum of Art GR 99.24

Brauronia, where we read of a *kandys*, a Persian jacket-like garment, with gold *pasmatia*.[27] Our Phokaian examples naturally go very closely with the examples found at nearby Kyme, especially those with female heads.[28]

The clothing discs, the strap necklace with droplet pendants and the fine ring seem to form a coherent group roughly dateable to the second half of the 4th century BC. The unusual necklace made up of units with teeth below is unparalleled but the filigree work and enamel suggest that it is of the same sort of date and general artistic milieu. The parts of two necklaces with different types of corrugated tubes are rather different in quality and design. The parallels that I have drawn suggest that they could be as early as the last quarter of the 5th century BC, but might well be of mid-4th-century BC date or later. The Eros earring pendant, however, is certainly much later and, therefore, intrusive: it is worth noting perhaps that the Eros is not mentioned in the body of Lawson's letter. Sadly, therefore, nothing more can really be said of the find context of these pieces of jewellery, but the two unusual necklaces have, nevertheless, opened the gates to the Lydian and Carian regions and it is into them that I should now like to pass.

II. Lydian jewellery

Thanks to the various publications of the so-called 'Lydian Treasure',[29] we can begin to gain a wider picture of what is sometimes referred to as Lydian jewellery, although chronologically, of course, it belongs to the earliest part of the period of Achaemenid domination, after the fall of Sardis in 547 BC, and could, therefore, be given a somewhat colourless label such as West Anatolian Achaemenid.[30] This material, together with the older finds from Sardis, and even those from Ephesus, as well as the unprovenanced material in various American and European collections, requires careful reassessment. We should also now look further south, to Caria with the aid of the material from Halikarnassos, especially the so-called 'Tomb of the Carian Princess'[31] and the tantalising fragments from the site of the Mausoleum, as well as the tomb assemblages from Iasos to the north. We might even look as far south as Lycia, although very little seems to have been preserved from this once wealthy region.[32]

We may begin with the material in the 'Lydian Treasure'. The spectacular jewellery and silver plate is all said to have come from a number of tumuli some 100km east of Sardis, further up the valley of the River Hermos, along which the Royal Road passed. In modern times, the region seems to have begun to be plundered from about 1962 and it is likely that a good number of tumuli over a wide area were robbed. The Turkish tomb robbers, when caught and questioned, associated most of the material with two tumuli – İkiztepe and Toptepe. Toptepe was opened in May 1965 and the single chamber tomb was said to have contained both plate and jewellery; İkiztepe was entered in June 1966 and found to have two chambers – from one it is reported that large numbers of silver vessels were removed, the other was apparently empty.[33] The recent Turkish publication presents some 220 pieces, but only 120 have been associated with their find contexts by adducing the reports of the convicted tomb robbers.

The other source of information is the registration sequence of the material as it entered the Metropolitan Museum of Art and, at times, this seems to be in conflict with the associations made in the Turkish publication.[34] Most of the Metropolitan Museum of Art's material was acquired in two main lots. The first lot was brought to the Museum's attention in the summer of 1966, after having already been shown to others, while the second lot was only offered some 18 months later. If the information provided by the robbers that the İkiztepe tumulus was plundered in June 1966 is correct, it is extremely unlikely that the contents could have arrived in a New York dealer's premises in time for it to be shown to the Metropolitan Museum of Art. It would seem much more

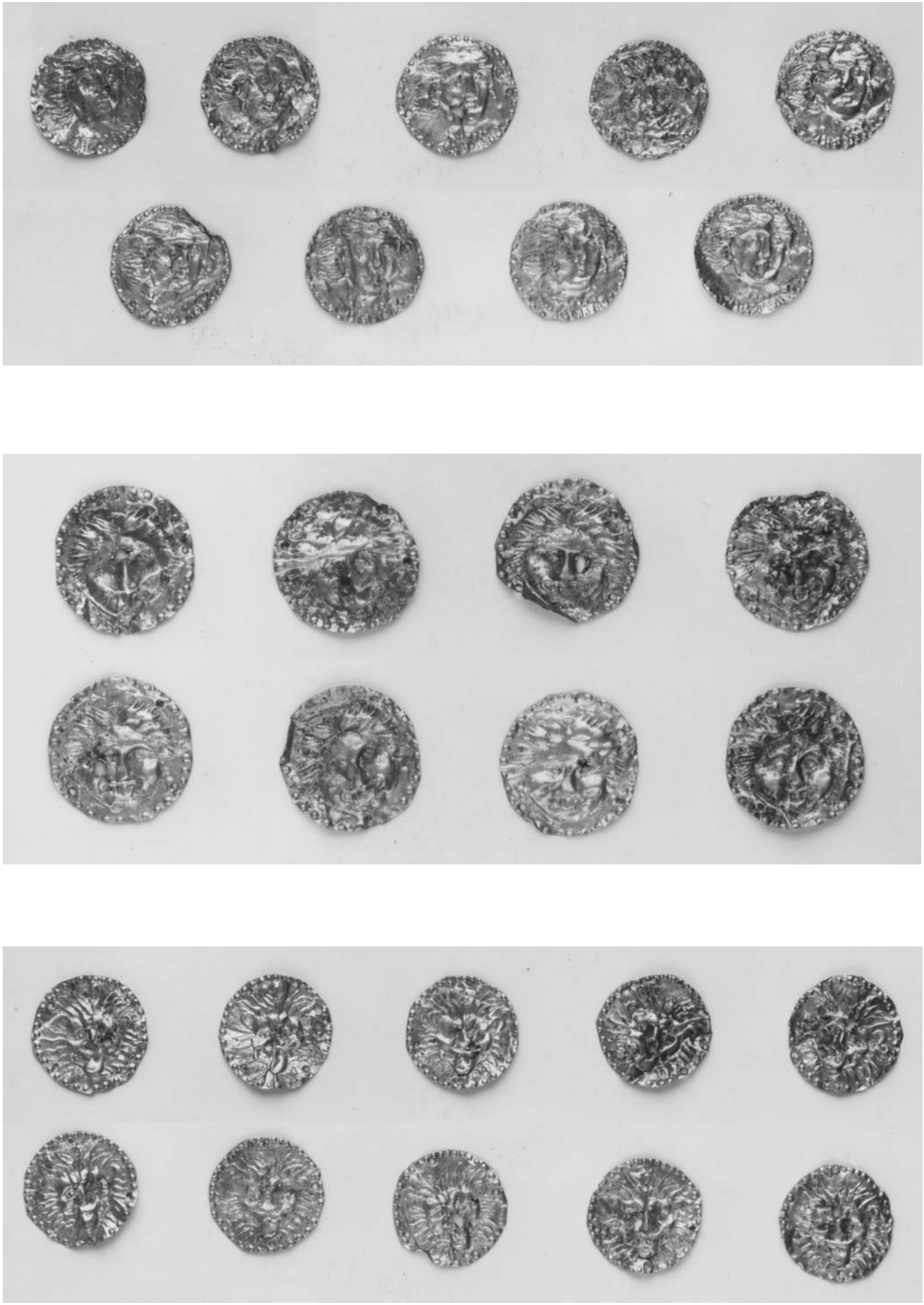


Figure 5 Gold dress ornaments, from Phokaia:
5a Female head: British Museum GR 1899.12-1.54-62
5b Gorgoneia: British Museum GR 1899.12-1.36-43
5c Lion heads: British Museum GR 1899.12-1.44-53

logical that the material that was in New York by the summer of 1966 came from the Toptepe tumulus, which is reported to have been entered in May 1965. The Metropolitan Museum of Art's accession sequence includes almost all of the pieces in the Turkish publication's list of the Toptepe material,[35] but it adds six further pieces.[36] Of these six additions, however, it should be noted that the two phialai with so-called Persian heads are specifically noted in the Turkish publication as 'allegedly found in Chamber 2 of the İkiztepe tomb'.[37]

In the case of the second lot of material acquired by the Metropolitan Museum of Art, that purchased in 1968, it is likely that a substantial amount of it represents the offerings in the İkiztepe tumulus. If this is correct, it might give a context to several important pieces that are left unprovenanced in the recent Turkish publication, including the sun-disk pectoral and the gold bracelets,[38] as well as all three of the pieces that bear a distinctive incised monogram.[39] If one continues this approach and examines the material by year of accession, one realises that the series of pieces acquired in 1969 and 1970 is largely miscellaneous and could have come from any of the tombs entered in the area, although it is interesting to note that the two bronze formers acquired in this year have a very different patina from the series bought in 1968 and presumed to be from İkiztepe,[40] while the fragments of a pair of earrings which have been isolated as Ephesian by Wolf Rudolph are thus not part of either of the two main groups.[41] The Metropolitan Museum's 1973 purchase, however, was of a group of five pieces sold at auction by Sotheby's.[42] All were said in the sale catalogue to have come from one and the same tomb, but whether they came from the İkiztepe tumulus or another burial cannot now be determined and nothing more than a general Lydian quality can account for their return to Turkey.[43] The material acquired after 1973 is even more problematical and its connection with either of the major tombs, those at Toptepe or İkiztepe, is very dubious.[44]

One final word of caution, however, must be sounded. We perhaps should not assume that all the material acquired in 1966 by the Metropolitan Museum came from the Toptepe tumulus, for Özgen and Öztürk note that the same group of villagers that robbed Toptepe also pillaged Yuvarnakaya and Topçatepe in the same year, while the 1966 lot included the marble *kline* supports in the form of sphinxes and two fragments of wall-paintings that came from the Harta tumulus.[45] Similarly, the 1968 lot may well have been contaminated by material from other finds. It should not be forgotten that all this material passed through the memories and imaginations of tomb robbers – there may have been much confusion at the time of the discoveries, much subsequent mixing and dividing of the material between its finders and their families, and much embroidering and obfuscating by middle men and dealers. Finally, we must also acknowledge the possibility that additional material from these tumuli escaped the net thrown out by the Metropolitan Museum in the years following 1966 and passed through the market to other museums and collectors.[46]

To illustrate this last point, we might begin by considering two related necklaces, once in the same private collection. The first is currently in the Bible Lands Museum in Jerusalem, but was included in the splendid 1996 special exhibition, *Pandora*, shown in America and in Switzerland.[47] Although no provenience was given, the style clearly pointed to Lydia and, specifically, to the material from the 'Lydian Treasure'. Furthermore, this necklace clearly consists of several very different types of beads, thereby revealing that, as strung, it is a pastiche made up of elements of more than one necklace. The most elaborate beads, of which there are eleven, take the form of a large bead with three chains ending in smaller pomegranate-like beads, seven of which have a point of red or blue glass inserted in the 'crown' – both types of bead are decorated with a leaf pattern and granules, although the arrangement of the leaves is slightly different. Very similar pomegranate-like beads are known from Sardis and on the hippocamp brooch from the Toptepe tomb. The larger leaf-pattern beads match so closely those on the acorn necklace, also from the Toptepe tomb, that one must consider if they might not actually belong together.[48]

There are three other types of much smaller bead on this necklace in Jerusalem which clearly do not belong with these large, elaborate beads. First, there is a series of beads made up from three rings of granules and from these beads are suspended beech nut pendants of red or blue glass (except in two cases where a plain gold beechnut has been reattached in error). Secondly, there are plain gold beads, from some of which are suspended plain gold beech nuts. Both these types may be matched on a further necklace from the 'Lydian Treasure', but unassociated with a particular tomb.[49] There remain three varieties of small beads without attachments – those of plain gold, those made up of multiple rings of granules and those of red glass. The gold beads, of both types, are to be found on the beech-nut necklace just mentioned.[50] The even smaller 24 red glass beads, however, are matched on the unusual string of ornaments from the Toptepe tomb, mentioned much earlier, where from the ends of small corrugated tubes hang chains that end in a red or blue glass bead, capped by a tiny rosette.[51] From the preserved 236 chains 145 of the beads are missing – I suspect that 24 of them have been wrongly threaded on the necklace in the private collection. Incidentally, this exceptionally long ornament was most probably a decorative fringe for a garment, for they were particularly common in Lydia.[52] Indeed, the mid-4th century BC inventory from the Heraion at Samos mentions a number of Lydian chitons with fringes, even noting that the fringes are coloured blue, purple or white – perhaps referring to coloured glass beads at their ends.[53]

This brings us to the second necklace which was recently offered on the New York market (**Colour Pl. 2**).[54] Here we find another 10 elaborate beads that take the form of a large spherical bead with three chains ending in smaller pomegranate-like beads, eight of which have a point of red or blue glass inserted in the 'crown', just as on the first necklace. We thus have a total of 21 of these elaborate beads and they must have originally been strung with the 20 large beads similarly ornamented with leaf decoration, said to have come from Toptepe.[55] On the New York market necklace there are also 15 beads with beech nut pendants (6 gold, 5 red glass, 4 blue glass). These go with similar beads on the first necklace (20 gold, 4 blue, 2 red) and those on the necklace from the 'Lydian Treasure' (6 gold, 4 blue, 6 red, 6 empty).[56] This would have given a necklace made up of at least 31 coloured glass beech nuts (13 red, 12 blue, 6 empty) and 32 of plain gold. This necklace would also have been strung with smaller spacer beads (some plain, some made up of rows of granules), which may be assembled from the three necklaces under consideration – the two from a private collection and that from the 'Lydian Treasure'.

Given the clear connections between the two necklaces in private hands and three pieces from the 'Lydian Treasure', it seems likely that both the former are not only pastiches but that they are actually made up from parts of several ornaments from that Treasure. We might even go on to ask whether the six chains ending in small red beads and a number of beech-nut pendants in both gold and red glass, all in the Berry collection and now strung in two other necklace pastiches, might not also belong, despite the dealer's apparent claim that they had been found before the Second World War.[57] Indeed, the same problems are raised by other pieces of jewellery in the Berry collection, which contains many pastiches, both by way of individual pieces and 'sets'. Amongst the Lydian material a further necklace clearly combines two incongruously matched elements: there are pomegranate-like pendants hanging from chains (five) and there are simple leaf-like elements (11), as well as modern blue faience spacer-beads.[58] Both these types of ancient elements are represented among the 'Lydian Treasure' – six more of the pomegranate beads on chains and 41 more of the leaf-like elements – and the dimensions are identical.[59] The leaf-like elements probably made up one necklace, while the pomegranates on chains may have originally belonged with simple spherical beads, such as those to be found on another Berry pastiche.[60]

The 'Lydian Treasure', however, contained not only jewellery and plate, but also the remarkable group of cast bronze formers for figures, animals, beads and other elements, briefly mentioned above.[61] They seem to have been found in the İkiztepe tumulus, which is said to have contained no jewellery.[62] These pieces are vital to our understanding of Lydian jewellery, for one of the formers bears on its side a version of the Ahura Mazda figure, the supreme god of the Persians.[63] This would seem to suggest that such formers were to some extent under satrapal control. It might even indicate that the deceased was a high-ranking official – indeed this makes much more sense than that he was himself a jeweller,[64] for taking a former to the grave would have stopped the production of a type, as did the removal or destruction of coin dies.

The 'Lydian Treasure' is from eastern Lydia, but it is clearly linked to the material from Sardis and as a whole must be generally representative of the best of Lydian jewellery of the later 6th and 5th centuries BC, following the region's absorption by the Achaemenid empire. After the King's Peace of 387/6 BC, Persia devolved more power in the west of her empire, replacing the single satrapy of Lydia with the triad of Lydia, Ionia and Caria. Of these it was Caria under its Hekatomnid dynasty that was to prove the most dominant, for by the middle of the 4th century BC Caria was in control not only of Lydia to the north and Lycia to the south, but also the Greek islands of Rhodes, Chios and Kos. This situation is to some extent reflected in the jewellery for we can find, as we have seen with the myrtle seed beads, the same forms at Sardis in Lydia, at Halikarnassos and Iasos in Caria and on Rhodes. Furthermore, there are other connections, such as the spool-like earrings, which seem to occur first in the Lydian sphere and then spread to East Greek cities on the mainland and onto Rhodes and Cyprus.

III. Cypriot jewellery

Let us turn now to this last mentioned region which fell for most of the 5th and 4th centuries BC within the Achaemenid ambit. Earlier in this paper the double corrugated tube elements of the Phokaia necklace were compared with three necklaces from Cyprus; one could go even further, for the mount for the pendant in the centre of the one in the British Museum looks very like the sort of pendants found at Sardis – it is heavily worn and might be a Lydian heirloom.[65] This, therefore, suggests contact of some sort between Lydia and Cyprus during the Achaemenid period.

Two types of earring are typical of Cyprus and both have Near Eastern connections. First the crescent-shaped sheet earrings which compare with the North Syrian (Deve Hüyük) type that was then adopted in other parts of the Achaemenid world.[66] The second type is spiral in form, a form known from all over the Greek world for several centuries, but on Cyprus the terminals seem more Achaemenid than Greek in their choice of beast.[67]

One rather noticeable technical feature of Cypriot jewellery is the use of plain wire, combined sometimes with simple beaded wire. We do not find the extensive use of spiral beaded wire that is typical of Greek jewellery from the rest of the Mediterranean from the early 4th century BC. This lingering traditionalism may in some way reflect the stronger ties with the Near East, where spiral-beaded wire was not employed.[68] It is for this, and other stylistic reasons, that the splendid pair of bracelets (**Colour Pl. 3**) found at Pasargadae as part of a hoard of jewellery in a coarse-ware Achaemenid jar outside one of the gate-pavilions leading to the Royal Garden and the grand reception hall, is not perhaps Achaemenid, as is so often claimed, but Cypriot.[69]

We may also now add to the corpus of Cypriot jewellery the extravagant pair of bracelets in the Miho Museum collection that have double lion head terminals (**Colour Pl. 4**).[70] They have been called Achaemenid, but, although the 'omega' form is Achaemenid, the style of the lion heads and the use of filigree and enamel are not Achaemenid but Greek, and more specifically Cypriot. We should note that the wire work is either plain or beaded, not spiral-beaded, and that the enamel has been used not just to fill the tongue pattern at the base of the collar but also to completely surround the spiral pattern above. This extensive use of enamel is typical of Cypriot jewellery,[71] for Greek jewellers by contrast tended to use isolated pools of coloured enamel, keeping it within definite frames of spiral beaded wire.

IV. Achaemenid jewellery

We have noted Achaemenid influence and Achaemenid types in the eastern Mediterranean, but a problem still surrounds true Achaemenid jewellery. For, so much fine Achaemenid-style jewellery in fact comes from the western fringes of the Achemenid empire, whether Lydian Sardis,[72] Carian Halikarnassos, Greek Rhodes, Vouni on Cyprus,[73] Vani in Colchis[74] or even Nymphaion on the northern shore of the Black Sea. In addition, there is also an example from mainland Greece, notably the famous Achaemenid bracelet in Karlsruhe that was said to have been found near the Corinth Canal in the late 19th century[75] – the Achaemenid gold ornaments for attachment to clothing from the sanctuary at Dodona perhaps tell us more about the export of oriental textiles than jewellery.[76] As a result, one has to wonder just how much Achaemenid jewellery might actually have been made on the fringes rather than sent as diplomatic gifts from the Persian heartland.

It is possible, however, to isolate one workshop group that seems to have been found at all the major centres of the Persian homeland, and it is an important group. We may start with a tomb found in 1901 on the Acropolis of Susa.[77] In a plain bronze

sarcophagus, shaped like a bath tub, was a skeleton, the upper part of which was covered with jewellery; there was also a silver phiale, two alabaster alabastra and two coins. The jewellery consisted of a torque, a pair of bracelets, a pair of earrings, a pair of buttons and parts of some six necklaces (**Colour Plates 5–8**). It is clear that the torque, bracelets, earrings, buttons and two of the necklaces were all made in the same workshop that specialised in jewellery with elaborate inlays. The torque and bracelets share not only identical lion head terminals but also the same decorative treatment of the manes and the series of pendant curls at the start of the hoops. These curls, which echo the Egyptian side-lock motif, also appear on the grander of the necklaces from the tomb. Furthermore, we should note that the rectangles with curved sides and central gold pin which form part of the inner frieze of the earrings recur on the torque as a collar between the lion's mane and the series of pendant curls.

From the Susa group we may turn to the amazing pectoral with a rectangular plaque in the Miho Museum (**Colour Pls 9–11**).[78] There is exactly the same motif, rectangle with curved sides (and central pin), right the way around the main part of the arc of the collar, and an arcade pattern with crenellations in the centre that is merely an elaboration of the arcade pattern on the Susa earrings. Note too not only the large panels with figured scenes, both backed and openwork, but also the Ahura Mazda motif around the main rectangular panel – Ahura Mazda is shown emerging from the disc, a motif repeated around the back of the collar. This same motif, treated in exactly the same way, appears on the buttons from the Susa tomb and on the triple spacer-beads for one of the necklaces from the same find.

It is clear, therefore, that the Miho Museum pectoral is from the same workshop as the jewellery from the Susa tomb. But we can go further, for a pair of earrings, now divided between New York and Boston, but of unrecorded provenance, has the same Ahura Mazda motif, surrounded by triangles – compare the triangles with those on the Miho Museum torque – and the whole ringed by an openwork frame of papyrus plants.[79] These earrings must also be from the same workshop. Furthermore, the tiny Ahura Mazda elements also allow us to associate a fragment found in the Treasury at Persepolis, which must be a necklace bead from the same workshop, as are the triple spacer-beads from the Susa tomb.[80]

In addition to the pectoral, the Miho Museum also contains a fragmentary pair of spectacular bracelets that end in winged goat protomes.[81] The hoops of these bracelets carry two ornaments, triangles and horsemen: the former recalls those on both the Ahura Mazda earrings and the Miho Museum pectoral, the latter are identical to those on the pectoral. This indicates that, as one might have expected, the bracelets must have been made in the same workshop. Finally, a button from the Pasargadae hoard has a floral design, a rosette, but the structure of the piece, its beaded gold border, its use of turquoise and other inlays, strongly suggests that it too is of the same date and probably from the same workshop as all the pieces discussed above.[82]

The further importance of this workshop lies in the fact that it provides some chronological pointers. The Susa tomb contained two silver sickles of the Phoenician city of Arwad that were dated by de Morgan, the excavator, to 350–332 BC. This dating, however, has recently been challenged by J. and A.G. Elayi, who place the coins in the late 5th century BC, but there is little to recommend such a dating, since it seems to be based solely on the authors' rather dubious comparisons with Athenian coins.[83] It remains incompatible with the evidence of the silver phiale that was also found in the burial, for it is of a common Achaemenid type, the decoration of which points to the middle or second half of the 4th century BC.[84] Similarly, the Pasargadae hoard, which includes a button of the same type as those in the Susa tomb, was most plausibly hidden in the face of Alexander's attack, a date which is supported by the animal-head bracelets probably of Cypriot origin (**Colour Plate 3**).[85] Finally, the Miho Museum pectoral preserves a dotted inscription on the back (**Colour Pl. 11**). It is a Greek weight inscription which may be translated as 'mina one drachmai six' (i.e. 106 drs).[86] The letter forms point to the later 4th century BC, as does the use of the new counting system that employed the letters of the alphabet as numerals. As a result, it seems most plausible that the workshop responsible for all these objects was operating in the 4th century BC and more specifically in the third quarter of that century.

Just how the great Miho Museum pectoral, created in the Achaemenid world, came to be given a Greek weight inscription is a mystery. It might have been a royal gift to a ruler of one of the western Hellenised satrapies who had it weighed and placed in his treasury or in that of a temple, or it might actually have been booty from Alexander's sack of one of the Persian centres that was marked then or taken westwards and subsequently marked as it entered some treasury. The fact, however, that the Miho Museum pectoral and bracelets are said by the dealer to have been found near Ardebil in north-western Iran,[87] on the south-west side of the Caspian Sea, allows us to develop a more detailed theory. For, after the sack of Persepolis Alexander struck north in pursuit of Darius, seizing on the way the royal treasures at Pasargadae too. At Ekbatana (modern Hamadan) he released his Thessalian cavalry and other Greek allies from his service, thereby ending the campaign of Greek revenge on Persia. Volunteers could re-enlist, with the incentive of a huge pay-offer, but the rest were paid in full, with an additional gratuity and much finery, and were ordered to march back to the Aegean. Alexander moved off again, east and north, and near the south-eastern tip of the Caspian Sea Darius III was betrayed. Alexander lingered on the southern shore of the Caspian, chasing retainers of Darius, and as he did so there was much further change: not only were more royal trappings and eastern dress assumed, but the troops were also now permitted to marry local women. In addition, he again allowed some soldiers to leave and it would not be surprising to find some of these veterans moving further round the Caspian to the west, for this would have been the sensible route home via the Araxes or Kura Rivers to Colchis and the Black Sea. The deposition of the Miho Museum pectoral and bracelets near Aderbil could well date from 330 BC and be linked to such demobilisations.

The certain find-spots of the products of our Achaemenid workshop, the three major Achaemenid centres of Susa, Persepolis and Pasargadae, as well as the less reliable Ardebil hoard, suggest that the workshop most probably had a royal sanction, producing jewellery specially for the court, perhaps even being part of the great *palace démontable* that was the Achaemenid seasonal touring court. The form of the pectoral and the style and technique of all the pieces of jewellery, however, suggest strong Egyptian influence. Although we know of Egyptian jewellers working for Darius in Susa in the late 6th century BC, it would seem possible that Persia's final reconquest

of Egypt in 343 BC under Artaxerxes III may have intensified Egyptianising tendencies in techniques, forms, motifs and style. It is even possible that some Egyptian craftsmen, who could make pieces like the contemporary miniature pectoral from the Tuch el Karamous hoard, were actually brought back to Persia to work for the Achaemenid kings.[88]

However, to end this cursory overview, we might return to the boundary between the Greek and Persian worlds. Although there is one example of a piece of purely Greek jewellery certainly from the Persian heartland, namely a tiny seed-shaped pendant from Persepolis,[89] the form and decoration of which point to an Ionian or Aeolian workshop, this, or the necklace from which it came, is hardly enough to suggest that East Greeks jewellers were actually drawn into service in the Persian court. Even if we could add the sections of a gold myrtle wreath of the same type as that from Kyme that are said to have been found with a large lot of Achaemenid jewellery and metalwork near ancient Ekbatana, the extremely small number of such Greek pieces probably indicates the movement of objects rather than of craftsmen.[90] Nevertheless, a pair of earrings recently on the New York market offers an interesting dénouement (**Colour Plate 12**).[91] The form is clearly Achaemenid, as is the closing mechanism, but the tondo decorated with a central rosette surrounded by a pattern of spirals in spiral beaded wire looks instead to the products of the Ionian and Aeolian workshops, as exemplified by the material from Kyme and Phokaia. I feel certain that these earrings were made by a Greek jeweller, but where he was working I cannot say – was it at a Greek centre such as Kyme, or one that was strongly Hellenised but actually part of the Persian empire like Halikarnassos, or could it have been made by an East Greek jeweller who ended up in the heart of the Persian world?

Abbreviations

Berry = W. and E. Rudolph, *Ancient Jewelry from the Collection of Burton Y. Berry* (Bloomington, 1974).

BM Cat Jewellery = F.H. Marshall, *Catalogue of the Jewellery, Greek, Etruscan and Roman in the Departments of Antiquities, British Museum* (London, 1911).

BM Cat Rings = F.H. Marshall, *Catalogue of the Finger Rings, Greek, Etruscan and Roman, in the Departments of Antiquities, British Museum* (London, 1907).

Bothmer, *Treasury* = D. von Bothmer, *A Greek and Roman Treasury* (The Metropolitan Museum of Art, Bulletin, Summer 1984).

Brooklyn = P.F. Davidson and A. Oliver, *Ancient Greek and Roman Jewelry in the Brooklyn Museum* (New York, 1984).

Lydian Treasure =İ. Özgen and J. Öztürk, *The Lydian Treasure* (Ankara, 1996).

Miho Museum = T. Umchara *et al.*, *Miho Museum: South Wing* (Kyoto, 1997).

Miller, *Athens and Persia* = M.C. Miller, *Athens and Persia in the Fifth Century BC* (Cambridge, 1997).

Pfrommer, *Studien* = M. Pfrommer, *Studien zu alexandrinischer und grossgriechischer Toreutik frühellenistischer Zeit* (Berlin, 1987).

Pfrommer, *Untersuchungen* = M. Pfrommer, *Untersuchungen zur Chronologie früh- und hochhellenistischen Goldschmucks* (Tübingen, 1990).

Rehm, *Schmuck der Achämeniden* = E. Rehm, *Der Schmuck der Achämeniden* (Münster, 1992).

Sardis = C.D. Curtis, *Sardis XIII: Jewelry and Gold Work Part I, 1910–1914* (Rome, 1925).

Segall, *Goldschmiedekunst* = B. Segall, *Zur griechischen Goldschmiedekunst des 4. Jahrhunderts v. Chr.* (Wiesbaden, 1966).

Shumei Family Collection = *Ancient Art from the Shumei Family Collection* (New York, 1996).

Stronach, *Pasargadae* = D. Stronach, *Pasargadae* (Oxford, 1978).

Williams, *Art of the Greek Goldsmith* = D. Williams (ed.), *The Art of the Greek Goldsmith* (London, 1998).

Williams and Ogden, *Greek Gold* = D. Williams and J. Ogden, *Greek Gold: Jewellery of the Classical World* (London, 1994).

Notes

1 Earlier versions of this paper were given at a colloquium in honour of Dr. Margot Schmidt in Basel (5 July 1997) and at a jewellery conference in Frankfurt (4–5 September 1997), organised by Wolf Rudolph on the occasion of the showing there of the exhibition 'A Golden Legacy: Ancient Jewelry from the Burton Y. Berry Collection'. I am particularly grateful to Dr H. Inagaki for providing the photographs of the jewellery in the Miho Museum, Dr Carlos Picon for that of the New York necklace, Dr Annie Caubet for those of the Susa jewellery in the Louvre, and Dr John Curtis for the Tehran photograph of the Pasargadae bracelet.

2 On Phokaia see most recently A.T. Hodge, *Ancient Greek France* (London, 1998), 7–15 (with bibliography in notes).

3 Kyme Group: D. Williams, 'The Kyme Treasure', in: A. Calinescu (ed.), *Ancient Jewelry and Archaeology* (Bloomington, 1996), 117–29; Williams and Ogden, *Greek Gold*, 92–104.

4 On A.W. Franks see M. Caygill and J. Cherry (eds), *A.W. Franks: Nineteenth Century Collecting and the British Museum* (London, 1997).

5 Department of Greek and Roman Antiquities, letter of 27 December 1892.

6 The list reads as follows: '6 portions of necklace, filigree [=GR 1899.12-1.9]; 1 end of necklace [=GR 1899.12-1.9]; 4 stars, filigree [made up in GR 1917.6-1.2694; *BM Cat Jewellery* 2694];1 end of drop [=GR 1899.12-1.35]; 27 stamped faces on gold leaf [=GR 1899.12-1.35];12 beads fr. necklace [made up in GR 1917.6-1.2694; *BM Cat Jewellery* 2694];1 gold massive ring engraved incuse [=GR 1917.6-1.59; *BM Cat Rings* 59];1 cupid, pendant [made up in GR 1917.6-1.2694; *BM Cat Jewellery* 2694].'

7 GR 1917.6-1.59: *BM Cat Rings* 59; Williams and Ogden, *Greek Gold*, no. 58 (with earlier bibliography).

8 J. Boardman, *Greek Gems and Finger Rings* (London, 1970), pl. 739; attributed to his Salting Group.

9 *BM Cat Jewellery* 2694 – length of double tubes 1.4cm, diam. of rosettes 0.6cm; length of single tubes 1.7cm; diam. of myrtle pods 0.6cm.

10 *Sardis*, no. 31 part (Tomb 232 – no other tomb contents recorded by Curtis) pl. 3 fig. 13.

11 *Brooklyn*, no. 16 (part). For the other elements in this group, the triangles, compare examples from Halikarnassos: M. Aykut Özet, 'The tomb of a noble woman from Halikarnassos', in: J. Isager (ed.), *Hekatomnid Caria and the Ionian Renaissance* (Odense, 1994) 88–96, esp. 94 no. I and p. 96 fig. 19; B. Bundgaard Rasmussen, 'Gold Ornaments from the Mausoleum at Halikarnassos', in: Williams, *Art of the Greek Goldsmith*, 70 no. 24, fig. 8.8. The Brooklyn material (71.79.1–116) is said to have been 'assembled by a diplomat in Istanbul before World War II' – Oliver's comment (*Brooklyn*, 11–12) that the group was in the collection of Mr. and Mrs. Thomas S. Brush is a misunderstanding – they never owned the objects, but generously provided the funding for the purchase.

12 *Sardis*, no. 44 (Tomb 75), pl. 4 fig. 2.

13 *Sardis*, no. 69 (Tomb 75), pl. 7 fig. 8; also found with two pairs of small lions on rectangular bases, perhaps brooches (no. 86). For the Nymphaion tomb see Vickers, *Scythian Treasures in Oxford* (Oxford, 1979), 38–41 (Grave II), pl. 6 d (earrings), pl. 7 (askos). For an example in the Oxus Treasure see O.M. Dalton, *The Treasure of the Oxus with other examples of Early Oriental Metalwork* (London, 1963), no. 156. For the type see Rehm, *Schmuck der Achämeniden*, 145 and 165–6 (nos F 63–5); it is to be found on the Persepolis frieze – Rehm, *Schmuck der Achämeniden*, fig. 58. See also the tomb-painting at Karaburun: *Lydian Treasure*, 47 fig. 89. Add the unprovenanced pair, Bloomington 76.57.90 (Berry coll.): *Golden Legacy*, no. 20 A.

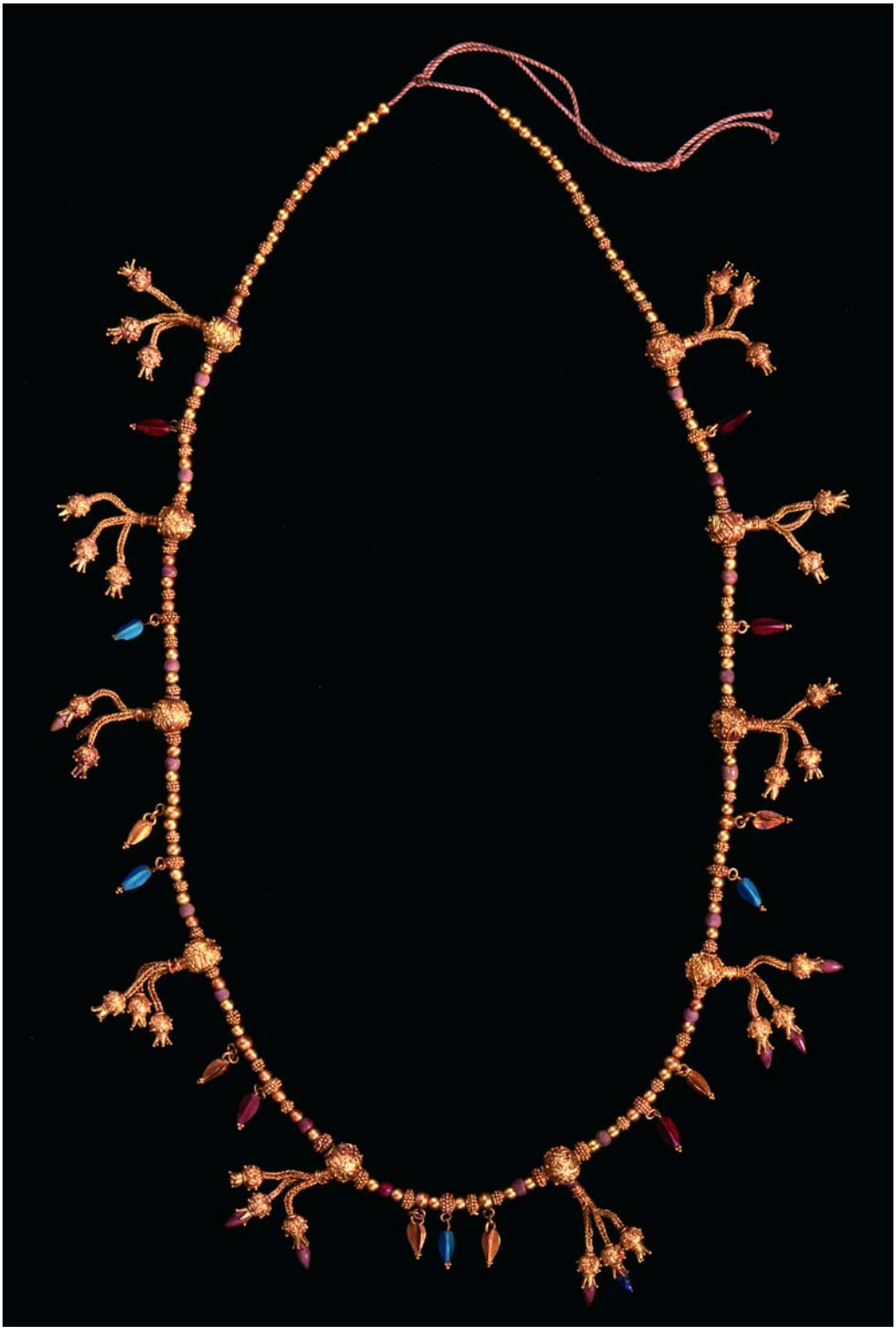
14 *Brooklyn*, no. 19.

15 Iasos, tomb X: D. Levi, 'Le Oreficerie di Iasos', *BdA* 49 (1964), 208, pl. 1. 1 and 4. Rhodes, Marmaro Tomb 32: L. Laurenzi *et al.*, *Clara Rhodos* VIII (Rhodes, 1936), 154. Rhodes, Tomb 153: G. Jacopi, *Clara Rhodos* III (Rhodes, 1929), 155. Rhodes, Tomb 155: *Clara Rhodos* III, 157; G. Konstantinopoulos, *Archaic Rhodes* (Athens, 1986), pl. 24. A related but rather more elaborate necklace, Boston MFA 1982.413, has myrtle seed pods, alternately of coloured glass and gold, attached to the bottoms of short rectangular sheet elements shaped as a cyma reversa and decorated with an egg-and-dart pattern.

16 Cyprus necklaces: Williams and Ogden, *Greek Jewellery*, nos 166 (*BM Cat Jewellery* 1957) and 178 (New York 74.51.3392); A. Pierides, *Jewellery in the Cyprus Museum* (Nicosia, 1971), pl. 16 lower. Nymphaion necklace: M. Vickers, *Scythian Treasures in Oxford* (Oxford, 1979), pl. 10 a (Oxford 1885.502; Grave 3).
17 *Lydian Treasure*, no. 109.
18 *BM Cat Jewellery* 2694 (part), GR 1917.6–1.2694: ht. 2.0cm.
19 For Eros holding a theatre mask cf. the example from the large tumulus at Hadji Moushkai (excavated 1841–1842 by Aschik): *Antiquités du Bosphore Cimmérien* (St. Petersburg, 1854), pl. 7. 6; Pfrommer *Untersuchungen* 275, FK 135. On theatre masks see further Pfrommer, *Untersuchungen*, 239 (on FK 68).
20 GR 1899.12–1.9: unit length 1.6cm, ht. 1.3; terminal length 1.8cm.
21 *Lydian Treasure*, no. 137.
22 Halikarnassos: B. Bundgaard Rasmussen, in: Williams, *Art of the Greek Goldsmith*, 67 and 70 no. 25, fig. 8.7. Ephesos: D. Hogarth, *Excavations at Ephesus: The Archaic Artemisia* (London, 1908), pl. 9. 27; *BM Cat Jewellery* 984.
23 GR 1899.12–1.35.
24 New York 99.24: Williams and Ogden, *Greek Gold*, no. 68.
25 I am very grateful to Richard Stone and Mark T. Wypyski for carrying out this analysis for me during a brief trip to New York and to Dr. Carlos Picon and Dr. Joan Mertens for making the New York piece available to me.
26 GR 1899.12-1.36-62: diam. 1.2 – 1.3cm.
27 See Miller, *Athens and Persia*, 165 with n. 94 (referring to *IG* II^{2}1523, 8–9 = *IG* II^{2}1524, 180–1), also p. 167 with n. 110.
28 For the Kyme *pasmatia* see *BM Cat Jewellery* 2084; Williams and Ogden, *Greek Gold*, no. 56. Cf. also *Brooklyn* no. 22 (from Asia Minor). Lydian (and Achaemenid) equivalents are of both circular and square form. For the square type see *Lydian Treasure* nos 116–119, with a reference in no. 118 to another large group once in a British private collection (Leigh Ashton), but sold in 1954 to a Hamburg dealer; one example in Boston, MFA 1970.365; a series in Cairo Museum (found at Mendes, 1870) – Ahura Mazda motif. For the circular type see Boston 1970.364 – Ahura Mazda motif.
29 See most recently, in addition to *Lydian Treasure*, J. Öztürk, 'Lydian Jewellery', in: Williams, *Art of the Greek Goldsmith*, 41–7.
30 For this term see P.R. Moorey, 'The technique of gold-figure decoration on Achaemenid silver vessels and its antecedents', *Iranica Antiqua* 23 (1988), 237.
31 For the 'Tomb of the Carian Princess' see above note 11.
32 Pair of earrings from Xanthos: Istanbul Mus. 6232 – P. Demargne, *Fouilles de Xanthos* I (Paris, 1958), pl. 4; T. Ergil, *Küpeler* (Istanbul, 1983), no. 11. Pair from Limyra: J. Borchhardt (ed.), *Götter, Heroen, Herrscher in Lykien* (Vienna, 1990), no. 146; J. Borchhardt, *Die Steine von Zémuri* (Vienna, 1993), 69, pl. 31.
33 For what is known of the plundering of these tombs see *Lydian Treasure*, 28, 48–52 (İkiztepe) and 52 (Toptepe).
34 For the history of the material while it was in New York see D. von Bothmer, 'A Curator's Choice', in: T. Hoving, *The Chase, The Capture: Collecting at the Metropolitan* (New York, 1975), 111–22 (esp. 119–22); D. von Bothmer, 'Les Trésors de l'Orfèvrerie de la Grèce orientale au Metropolitan Museum de New York', *Académie des Inscriptions & Belles Lettres, Comptes Rendus* 1981, 194–5; Bothmer, *Treasury*, nos 16–71. The sequence of accession numbers is usefully assembled in *Lydian Treasure* 240–1. I am very grateful to Dr. von Bothmer for discussing these matters with me.
35 *Lydian Treasure*, nos 106–21; no. 120, a pair of ear-reels, which was not acquired by the Metropolitan until 1968, is probably intrusive.
36 *Lydian Treasure*, nos 14, 18, 36–9, 56 and 78.
37 Phialai with heads: *Lydian Treasure*, nos 36–37; for the report of their find-spot see p. 90 (no. 36), which seems to depend on the testimony of one Osman, a blacksmith, given twenty years after the events and against a background of local betrayals and bitterness (see M. Kaylam, 'Who stole the Lydian Hoard?', *Connoisseur* July 1987, 66–73). One might note that the 'curls of hair' over the foreheads are, in fact, much more likely to be horns, marking the heads out as divine guardians, rather than mortals.
38 E.g. *Lydian Treasure*, nos 128, 130, 134–5.
39 *Lydian Treasure*, nos 40, 96, 160.
40 *Lydian Treasure*, nos 193 and 197. This is the result of these two pieces having been only lightly cleaned, whereas the other formers seem to have been stripped.
41 *Lydian Treasure*, no. 149. For the type see two articles in Williams, *Art of the Greek Goldsmith*: J. Öztürk, 'Lydian Jewellery', 44 with n. 45; and W. Rudolph, 'The Sanctuary Workshop at Ephesus', 105–9.
42 Sotheby's London, 10 July 1972, lot 60 (= New York MMA 1973.11.7 to 11).
43 *Lydian Treasure*, nos 28 and 126 are from this sale.
44 Five pieces purchased in 1980 (MMA 1980.11.12–16) are said to have come from Syria, but three of them (*Lydian Treasure*, nos 30, 71, 75) were reclaimed by Turkey, a circumstance that it is difficult to understand.
45 *Lydian Treasure*, nos 1–3.
46 Much Lydian style plate has gone through the market since the mid-1960s and some of it may have come from these contexts – cf. Bothmer 1975 (n. 34), 120, and Bothmer, *Treasury*, 34 on no. 43, mentioning pieces in Berlin (1974.2 and 3: W.-D. Heilmeyer *et al.*, *Antikenmuseum in Berlin: Die ausgestellten Werken* [Berlin, 1988], 345, nos 7–8) and the Ashmolean Museum, Oxford. Bothmer's reference to pieces in Oxford must be the result of a misunderstanding of the two pieces (juglet and ladle) from the collection of Mrs Brenda Bomford on show in the Ashmolean in 1966 and later acquired for Toronto: J.W. Hayes, *Greek, Roman, and Related Metalware in the Royal Ontario Museum* (Toronto, 1984), nos 1–2; said to have been exported from Lebanon in 1964. In addition to these pieces, one thinks of the silver phiale in Bloomington (69.102.2: A. Oliver [ed.], *Silver for the Gods* [Toledo, 1977], no. 2). The comparison with one of the İkiztepe phialai was noted by Oliver, but the association rather dismissed by Bothmer on grounds of size (*Treasury*, no. 29). One might note, however, that the pair of lobed phialai from the Toptepe tomb are also of different sizes (*Lydian Treasure*, nos 38–9). The authors of *Lydian Treasure* (on no. 24) note another group (juglet, phiale, ladle and mirror) on the Munich market in 1986, which then passed though the American market minus the mirror (*Hesperia Art Auctions*, New York, 27 November 1990, lot 11 – see also *NFA Antiquities*, Los Angeles, 1991, no. 30).
47 G.M. Bernheimer, *Glories of Ancient Greece: Vases and Jewelry from the Borowski Collection* (Jerusalem, 2001), no. 98. E.D. Reeder (ed.), *Pandora: Women in Classical Greece* (Baltimore, 1995), no. 29.
48 Sardis beads: *Sardis*, no. 51 (Tomb 836), pl. 5 fig. 3 and pl. 6 fig. 1. Hippocamp brooch: *Lydian Treasure*, no. 112. Acorn necklace with large beads: *Lydian Treasure* no. 108. A somewhat similar Lydian leaf-bead, but larger, was recently on the New York market: Fortuna Fine Arts Ltd., *The Gift of the Gods: Jewelry from the Ancient World* (New York, 1996), no. 32.
49 *Lydian Treasure*, no. 133. Cf. also *Sardis*, no. 26 (Tomb 381), pl. 3 fig. 14.
50 *Lydian Treasure*, no. 133 has 19 smaller granule beads and 4 larger granule beads, as well as some 59 plain gold bead (there is some variation in size; and two with plain gold wire rings on either side). Reeder (n. 47), no. 29 has 20 small granule beads and 4 larger granule beads, and 45 plain gold beads (some apparent variation in size). Just how they were originally strung can no longer be determined (in addition one has to accept that a slight mismatching of beads may well have been common in antiquity, either at time of production or upon later repairs). One might consider the possibility that the beads with acorn pendants preserved on *Lydian Treasure*, no. 108 might have originally been combined with the cross-hatched beads strung on *Lydian Treasure*, no. 139.
51 *Lydian Treasure*, no. 109.
52 This suggestion was first made by Bothmer, *Treasury*, 207. It has not been picked up by the authors of *Lydian Treasure* (no. 109) nor in Jean Öztürk's article in Williams, *Art of the Greek Goldsmith*.
53 See Miller, *Athens and Persia*, 159–60; D. Ohly, 'Die Göttin und ihre Basis', *AM* 68 (1959), 25–50, esp. 48–9.
54 Christie's New York, 13 June 2000, lot 415.
55 *Lydian Treasure*, no. 108.
56 *Lydian Treasure*, no. 133.
57 *Berry,* no. 44a part; *Golden Legacy*, no. 30a. *Berry,* no. 45a part; *Golden Legacy*, no. 41a.
58 *Berry*, no. 40; *Golden Legacy*, no. 11.
59 *Lydian Treasure*, nos 135 and 134.
60 *Berry*, no. 39; *Golden Legacy*, no. 10a. Three more knuckle-bone beads (same dimensions and technique) are to be found among the Brush jewellery in Brooklyn (*Brooklyn,* no. 14); and there are two in Hamburg (1967.144 a–b: H. Hoffmann and V. von Claer, *Antiker Gold- und Silberschmuck* [Mainz, 1968], no. 46). Perhaps all actually belong with the 'Lydian Treasure' – the acquisition date of the Hamburg pieces would seem to fit.
61 *Lydian Treasure*, nos 188–219. For another such former see the example in Kassel, Br 621: U. Höckmann, *Antike Bronzen: Eine Auswahl* (Kassel, 1972), no. 15, pl. 3 (acquired in Smyrna in 1902).

62 For the suggestion as to find-spot see *Lydian Treasure*, p. 51 ('ingots'), see also pp. 29 and 61.
63 *Lydian Treasure*, no. 195.
64 The idea that one of the tombs might have been that of a jeweller appears in *Lydian Treasure*, 61 and in Öztürk (n. 52), 45–6.
65 Williams and Ogden, *Greek Gold*, no. 166. Cf. *Sardis*, nos 35–7 and 40, pl. 3 figs 4–7. Cf. also *Lydian Treasure*, nos 146–8.
66 See most recently Rehm, *Schmuck der Achämeniden*, 147 no. F. 91, fig. 118. For the Cypriot version see Williams and Ogden, *Greek Gold*, nos 162 and 175.
67 See Williams and Ogden, *Greek Gold*, nos 165, 171–4.
68 See Williams and Ogden, *Greek Gold*, 226–7.
69 Stronach, *Pasargadae*, pls 146–7.
70 *Shumei Family Collection*, 59 no. 24 (K. Benzel) and 188 (J.-F. de Lapérouse); *Miho Museum*, no. 43 (M. Pfrommer).
71 Cf. the fine pair divided between Berlin and the Louvre: A. Greifenhagen, *Schmuckarbeiten in Edelmetall* II (Berlin, 1975), pl. 38, 4–5; A. Caubet, A. Hermary and V. Karageorghis, *Art antique de Chypre au Musée du Louvre* (Paris, 1992), no. 197.
72 In addition to the material published in *Sardis*, there is also the group said to be from Sardis in Pforzheim: Segall, *Goldschmiedekunst*.
73 For the Vouni Palace hoard see E. Gjerstad *et al.*, *The Swedish Cyprus Expedition* III (Stockholm, 1937), 238 no. 292.
74 For the Vani material see A. Tschkonia, *Oqros samkaulebi wanis naqalaqaridan* (Vani Arqeologiuri gatchrebi 6, ed. O. Lordkipanidse; Tbilisi, 1981); A. Djavakhichvili and G. Abramichvili, *Orfèvrerie et toreutique des musées de la République de Georgie* (Leningrad, 1986), pls 21–2 (pectoral and bracelets); O. Lordkipanidse, 'Vani - Ein antikes religiöses Zentrum in Lande des Goldene Vlieses (Kolchis)', *JbRGZM* 42 (1995), 353–401, esp. pls 5.1–2 (bracelets) and 6.1–2 (pectoral). The pieces all come from Tomb N 6.
75 Karlsruhe F. 1816: Pfrommer, *Untersuchungen*, 335, TA 39; Rehm, *Schmuck der Achämeniden*, 14–5 and 56–7 no. A 33.
76 Dodona, Ioannina Mus. 4931 (lion): 'Chronique des fouilles et découvertes archéologiques en Grèce en 1955', *BCH* 80 (1956), 300 fig. 2 lower; P. Amandry, 'Orfèvrerie achéménide', *AK* 1 (1958), 10, n. 11; Segall, *Goldschmiedekunst*, 16, who mentions a piece in Athens (ex Carapanos collection) and connects it with the same find; Rehm, *Schmuck der Achämeniden*, 182 and 220 no. H.47. Ioannina Mus. 4933 (wing), also from Dodona, must be Achaemenid too. On Persian objects in Greece see now Miller, *Athens and Persia*, 41–3.
77 J. de Morgan, 'Découverte d'une sépulture achémenide à Suse', *Mémoires de la Délégation en Perse* 8 (1905), 29–58; P.O. Harper *et al.*, *The Royal City of Susa* (New York, 1992), 242–52; F. Tallon *et al.*, *Les pierres précieuses de l'Orient ancien des Sumériens aux Sassanides* (Paris, 1995), 113–20.
78 *Shumei Family Collection*, 48–9 no. 19 (K. Benzel), 185 (J.-F. de Lapérouse); *Miho Museum*, no. 38 (M. Pfrommer). For a detail of the rectangular plaque see also S.M. Goldstein *et al.*, *Ancient Glass* (exhibition catalogue, August 2001, Miho Museum), no. 61.
79 New York 1989.281.33 (Schimmel Gift): *Metropolitan Museum of Art Bulletin* 49.4 (1992), 18. Boston MFA 1971.256: J.F.X. McKeon, 'Achaemenian Cloisonné-Inlay Jewelry: An important new example', in: H.A. Hoffner (ed.), *Orient and Occident: Essays presented to Cyrus H. Gordon on the Occasion of his Sixty-fifth Birthday* (Alter Orient und Altes Testament 22; Kevelaer and Neukirchen-Vluyn, 1973), 109–17; T. Kendall, 'A New Gallery of Ancient Near Eastern Art in the Museum of Fine Arts, Boston', *Minerva* 10.2 (1999), 37 fig. 9. For both see Rehm, *Schmuck der Achämeniden*, 148 and 169, no. F 93. It should be considered whether this pair of earrings might have come from the same context as the Miho Museum pectoral and bracelets (see notes 75 and 78).
80 Persepolis: E.F. Schmidt, *Persepolis II: Contents of the Treasury and other Discoveries* (Chicago, 1953), pl. 43, 10. Susa: de Morgan (n. 77), 52 fig. 80 and pl. 5, 6.
81 *Shumei Family Collection*, 50–1 no. 20 (K. Benzel), 185–6 (J.-F. de Lapérouse); *Miho Museum*, no. 39 (M. Pfrommer).
82 Stronach, *Pasargadae*, pl. 157 a–b.
83 The coins are Louvre, Susa 508. 1 and 2. J. and A.G. Elayi, *Studia Iranica* 21 (1992), 265–70.
84 For the phiale see de Morgan (n. 77), 43 and pl. 3; H. Luschey, *Die Phiale* (Bleicherode, 1939), 127; Pfrommer, *Studien*, 87 n. 485. For the shape cf. the Macedonian version from Derveni Tomb B: P.G. Themelis and I.P. Touratsoglou, *Oi taphoi tou Derveniou* (Athens, 1997), 66 no. B 18.
85 For the dating of the Pasargadae hoard see Stronach, *Pasargadae*, 168–77.
86 P. Bernard and H. Inagaki, 'Un torque achéménide avec une inscription grecque au Musée Miho (Japon)', *Académie des Inscriptions et Belles-Lettres: Comptes Rendus des Séances de l'Année 2000 Novembre-Décembre* (2000), 1371–437. 106 drachmai equals 455.7g, but the current weight is only 422.5g. Translating any original weight into a meaningful amount of gold is, of course, made difficult by the addition of the numerous inlays. One might be correct in imagining that the original amount of gold used by the goldsmith was equivalent to 5 *karshas*, an Achaemenid unit of weight (1 karsha = 10 darics = 83.3g. For the *karsha* see A.D.H. Bivar, 'Achaemenid Coins, Weights and Measures', *Cambridge History of Iran* II [1985], 610–49, esp. 637). Five *karshas* would give a weight of about 417g – the remainder being inlays. The gold used for the bracelets, although now fragmentary (each missing one terminal: weights 163.6g and 167.6g), may be estimated to have weighed together, when complete, another 5 *karshas*. Cf. also Curtis in this volume, p. 120.
87 The association of the torque and the bracelets is mentioned by M. Pfrommer, *Miho Museum*, no. 39. It is not clear what other objects were found in the hoard.
88 Cairo JE 38084, from Tuch el Karamous: Pfrommer, *Studien*, pl. 27d. Cf. also New York, MMA 49.121.1: C. Aldred, *Jewels of the Pharaohs* (London, 1971), fig. 146. For the history of polychrome cloisonné jewellery in the Near East see now P.R.S. Moorey, 'Material Aspects of Achaemenid Polychrome Decoration and Jewellery', *Iranica Antiqua* 33 (1998), 155–71. The Vani pectoral (see above n. 75) may have been made in Egypt or in the Achaemenid heartland, or it could have come from the Lydian sphere.
89 Persepolis: Schmidt (n. 80), pl. 43. 5.
90 *Illustrated London News* 17 July 1948, p. 58 fig. 1 (once Paris, collection of Maurice Vidal; said to have been found at Hamadan in 1920). The Kyme wreath is *BM Cat Jewellery* 1632.
91 Christie's, New York, 14 June 1996, lot 44.

Colour Plate 1 Gold necklace, from Phokaia: British Museum GR 1899.12-1.9



Colour Plate 2 Gold necklace once on the New York market

Colour Plate 3 Gold bracelet from Pasargadae with ibex head terminals: Tehran, National Museum. Reproduced by kind permission of Ebrahim Khadem -Bayat. All rights reserved

Colour Plate 4 Gold bracelets with lion head terminals: Miho Museum SF3.116e-f

Colour Plate 5 Gold bracelet from Susa: Louvre SB 2761. Photo RMN/ © Droits réservés

Colour Plate 6 Selection of jewellery from a tomb on the Acropolis of Susa: Louvre SB 2760, 2761-2, 2764-5, 2763, 12070 and 2768. Louvre, Dist RMN/ © Lee Oi-Cheong

Colour Plate 7 Pair of gold earrings from Susa: Louvre SB 2764-5. Louvre, Dist RMN/ © Lee Oi-Cheong

Colour Plate 8 Pair of gold buttons from Susa: Louvre SB 2766. Louvre, Dist RMN/ © Lee Oi-Cheong

Colour Plate 9 Gold pectoral: Miho Museum SF3.112

Colour Plate 10 Detail of gold pectoral: Miho Museum SF3.112

Colour Plate 11 Detail of back of gold pectoral: Miho Museum SF3.112

Colour Plate 12 Gold earrings, once on the New York market (photograph courtesy of Christie's, New York)

Colour Plate 1 Tomb of Cyrus at Pasargadae

Colour Plate 2 Fragment from rim of Greek cauldron showing pair of horses from Persepolis (Tehran, National Museum 2207). Reproduced by kind permission of Ebrahim Khadem-Bayat. All rights reserved

Colour Plate 3 Bronze knucklebone with a dedicatory Greek inscription originally from the Temple of Apollo at Didyma. Louvre, Dist RMN/ © Etienne Revault

Colour Plate 4 Oxus Treasure silver statuette of naked figure with gold headdress (British Museum ANE 123905)

Colour Plate 5 Oxus Treasure gold signet ring showing Heracles (British Museum ANE 124002)

Colour Plate 6 Oxus Treasure gold finger ring showing two women playing a game (British Museum ANE 124003)

Colour Plate 7 Oxus Treasure gold scabbard (British Museum ANE 123923)

Greek Influence on Achaemenid Art and Architecture

John Curtis

I. Introduction

It was with some trepidation that I agreed to speak at this conference on 'Greek influence on Achaemenid minor arts', a title which I have now changed to 'Greek influence on Achaemenid art and architecture' to reflect more accurately the contents of my paper. My nervousness stems from the fact that the subject is very large, requiring expertise in many different areas, and views are often sharply polarised ('Greek' versus 'Oriental'). I make no apologies for the fact that my own approach is from an oriental viewpoint. Essentially, what I offer here is a brief survey of this complex subject, which does not pretend to make any original contribution. It may serve a useful purpose, however, in indicating the range of the subject and pointing to some of the most helpful bibliography. Since the paper was delivered in 1997, John Boardman's monumental *Persia and the West* has appeared, and as will be clear from the references I have made extensive use of this as well as his earlier works.

It is generally agreed that Achaemenid Persian art, at least in its official expression, is eclectic, that is to say that it drew on a number of different sources for ideas and inspiration. This is because the Persians, in Near Eastern terms, were a young civilization, and did not have a lengthy tradition of monumental art on which to draw. Their art was therefore influenced, to a greater or lesser degree, by a number of the peoples with whom they came into contact, and amongst these were the Greeks.

In about 546 BC, Cyrus defeated the Lydians and captured Sardis. The net result of this was that much of western Anatolia was brought under his control, and shortly afterwards Lycia, Caria and even the Greek cities of Asia Minor were added to the Persian Empire. Then, with the invasions of 490–480 BC, the Persians were able to experience at first hand the art and material culture of mainland Greece. All this must have made a considerable impression on them, but was there a tangible effect on Achaemenid major and minor arts?

My intention in this paper is to concentrate on the central part of the Achaemenid Empire, that is Greater Iran and Mesopotamia, and not to examine the evidence from provincial areas such as Syria and Phoenicia, and Anatolia. This is partly because to do so would greatly expand the scope of this paper, but also because western Anatolia, at least, with its colonies of Greek settlers, is a very special case. Here in Asia Minor and adjacent regions there developed a distinctive Graeco-Persian art in which, as Nylander[1] has said, Greek artists working for Persian grandees treated Persian motifs in a Greek way and in a Greek style.

In assessing the extent of Greek influence, and indeed the extent of other foreign influences, it is instructive to look first at what is the most informative historical source for this question.

In his famous inscription describing the construction of his palace at Susa, Darius lists the places which supplied raw materials, people who helped in their transportation, and the craftsmen who worked them at Susa.[2] Thus, cedar wood came from Lebanon, *yakā* wood from Gandara and Carmania, gold from Sardis and Bactria, lapis lazuli and carnelian from Sogdiana, turquoise from Chorasmia, silver and ebony from Egypt, 'wall ornamentation' from Ionia, ivory from Ethiopia, Sind and Arachosia, and stone for the columns from the local Elamite village of Abiradu. With regard to transportation, Assyrians brought the cedars of Lebanon to Babylon, and from there they were taken to Susa by Carians and Ionians. The materials were 'wrought' in Susa by craftsmen of various nationalities. Thus, the Babylonians were responsible for the brickwork, including presumably the polychrome glazed brick panels. The stonemasons were Ionians and Sardians, the goldsmiths were Medes and Egyptians, the carpenters were Sardians and Egyptians, and the men who 'adorned the wall' were Medes and Egyptians. There is no mention here of materials or craftsmen from mainland Greece, but Asia Minor does figure in the inscription. Thus, the 'wall ornamentation', whatever that may have been,[3] came from Ionia, the cedars of Lebanon were hauled from Babylon to Susa by Carians and Ionians, the stonemasons were Ionians and Sardians, and some of the carpenters were Sardians, the others being Egyptian.

II. Stoneworking techniques and styles

Most significant for our purpose is the use of Ionian and Sardian stonemasons. Greek influence on Achaemenid monumental buildings and stone sculpture has long been recognised, and there are even a few Greek inscriptions in a quarry near Persepolis.[4] There are also incised graffiti showing human heads in the Greek style on a fragment of sculpture from Persepolis.[5] The extent of this Greek influence, however, has been much debated. Foremost amongst those advocating a very considerable contribution from Greek art was Gisela Richter,[6] who wrote an important article on the subject in 1946 which, anticipating her conclusions, she entitled 'Greeks in Persia'. This was taken to extremes by some later scholars. For example, J.M. Cook[7] asserted that Telephanes,[8] a Greek sculptor said by the elder Pliny to have worked for Darius and Xerxes, was 'the grand master of the Persepolis friezes', a suggestion which can scarcely be taken seriously.[9] Ernest Herzfeld,[10] on the other hand, argued that Greek influence was minimal if not non-existent. An in-depth appraisal, however, was not available until 1970, when Carl Nylander[11] published his pioneering study on *Ionians in Pasargadae*.

Now a consensus is beginning to emerge, and the generally accepted view is that after his conquest of Lydia Cyrus turned his mind to the creation of a splendid new city at Pasargadae. For the construction of the stone buildings, which were not traditional in Iran, workmen were brought in from Ionia and Lydia. Because of this influx of foreign workers, certain Greek and Lydian features can be noticed in the stone buildings of Pasargadae and, to a

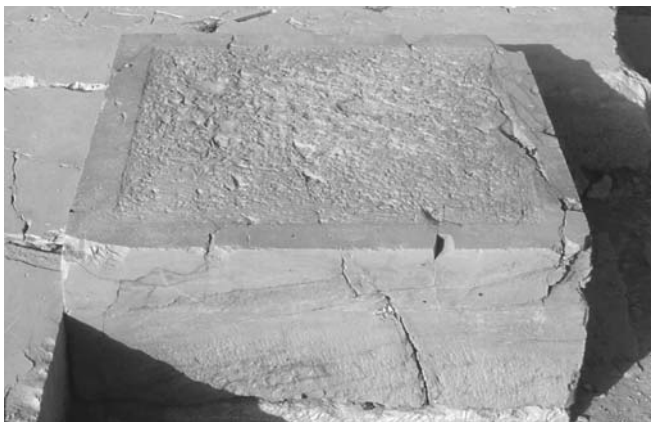


Figure 1 Stone block showing *anathyrosis* in Palace P at Pasargadae

Figure 2 Column drum showing *anathyrosis* on base in Palace S at Pasargadae

lesser extent, Persepolis. These features include both stoneworking techniques and details of form and style. The principal features[12] that have been cited as evidence for Greek influence are given below.[13]

1. Use of tooth-edged (or claw-toothed) picks and chisels

The marks left by claw-toothed chisels are very distinctive, consisting of rows of indentations on the surface of the worked stone. These marks are visible in Palace P at Pasargadae and everywhere at Persepolis.[14] Nylander believes that claw-toothed chisels appeared in Greece around 570 BC and were first used in Iran in the decade 540–530 BC. He therefore concludes 'there can be no doubt that their introduction into Iran was effected by Greeks'.[15]

***2. Anathyrosis* (Figs 1 and 2)**

This is a way of creating tight joints between stone blocks and column bases and drums. In this method, a smooth area was created only around the edges of the blocks or columns to be joined, while the central part was dug out to a deeper level. This reduced the surface area to be joined, and made it easier to get a close fitting joint. In the view of Nylander,[16] evidence for *anathyrosis* can be found in the Greek world from early archaic times, for example at Olympia and in early Ionian buildings, and is unknown in Iran before its introduction first in Pasargadae and then in Persepolis. He therefore concludes that '*anathyrosis* is probably a Greek invention and must have come to Iran, directly or indirectly, from the Greek sphere'.[17]

3. Clamping techniques

Of particular interest here are the types of clamp used to hold the stone blocks together, in particular dovetail clamps (**Fig. 3a**)[18] and narrow hook clamps (**Fig. 3c**).[19] Generally the clamps themselves were of iron, and molten lead was poured around them to hold them firmly in position. Nylander claims that the so-called 'double-clamp' (a horizontal clamp with vertical pegs in a dovetail shaped cutting; **Fig. 3b**) was first widely used in the Graeco- Lydian sphere around 600 BC,[20] and he concludes that 'there can be no doubt as to the nature of the relation between Greco-Lydian and Achaemenian clamping techniques'.[21] There are undeniably similarities between Greek and Achaemenid clamping methods, and it is certainly possible that the Greek world provided the model for Achaemenid Iran, but on the other hand we should not discount the possibility of Assyrian influence. At Khorsabad, Place found two dovetail-shaped lead clamps with projecting dowels,[22] and the Chicago expedition found fragments of lead that might have been used for the same purpose.[23] At Nimrud, Layard found one iron clamp in position and iron stains on other reliefs.[24] There is also evidence from Ashur of stone masonry having been fixed together with dovetail-shaped clamps.[25] Lastly, it is worth noting that Diodorus Siculus says that in the construction of Semiramis' bridge at Babylon the stones were united by iron clamps and the joints fitted by pouring in lead (Book II.8.3). We should not take this latter account at face value, of course, but the sum of the evidence from Mesopotamia shows we should be cautious before underestimating the extent of influence on Achaemenid Iran from that area.

***4. Tomb of Cyrus* (Colour Pl. 1)**

The design and construction of the tomb of Cyrus at Pasargadae is thought to owe much to Lydian architects and masons,[26] and amongst the features that are cited as indicating Greek, specifically Ionian influence, apart from nos 1–3 above, the following are the most important:

a) The *cyma reversa* on the Tomb of Cyrus, a double moulding that is convex above and concave below.[27]

Figure 3a Dovetail clamp with lead filling in the main staircase at Persepolis

3b Dovetail clamps in Palace S at Pasargadae

3c Column with hook clamps near the Unfinished Gate at Persepolis

b) The denticulation (imitating the ends of joists) under the cornice moulding on the Tomb of Cyrus.[28]

5. Drafted margins in Tall-i Takht

Some of the stone blocks of the Tall-i Takht at Pasargadae with their smooth drafted margins and finely pecked centres can be compared with masonry in the Lydian palace at Sardis and at many sites in Ionia and mainland Greece, particularly the altar of Poseidon at Monodendri in Ionia.[29]

6. Rosettes

The carved rosettes on a fragment of white limestone found on the Tall-i Takht platform but tentatively attributed to the Zendan-i Suleiman and the rosettes on the robe of the winged figure in Gate R are of a distinctive type that has pointed sepals between the petals.[30] Rosettes of this particular type have parallels only in Ionia (eg. Samos, Ephesus and Miletus), which leads Nylander to claim that 'these rosettes… testify to the indisputable presence of an Ionian carver in Pasargadae'.[31]

***7. Masons' marks* (Fig. 4)**

A number of scholars have suggested that some of the masons' marks found at Pasargadae and Persepolis, but particularly those at Persepolis, might be Lydian in origin.[32] Writing at an earlier date, Ernst Herzfeld was convinced that the marks 'are certainly not Greek. The constituent elements are either old inherited symbols or combinations of cuneiform elements; possibly some of them are connected with Egyptian marks'.[33] The truth probably lies somewhere between these polarised views. There may be some Lydian influence, but there is probably also some local Iranian, or at least Near Eastern, input. It is unlikely to be a coincidence, for example, that some of the simpler marks are paralleled on glazed bricks from Susa that probably have nothing to do with Lydian stonemasons.[34]

***8. Column bases (*Fig. 5)**

The column bases with horizontally fluted tori in Palace P at Pasargadae are similar to those commonly found in Greece and Ionia.[35]

9. Style of drapery

Greek influence is commonly seen in the Persian dress with vertical overlapping folds and zigzag hems found at least from the time of Darius onwards.[36]

10. Plasticity

In 1946, Henri Frankfort compared the relief sculptures from Susa and Persepolis which he thought were 'conceived as a plastic

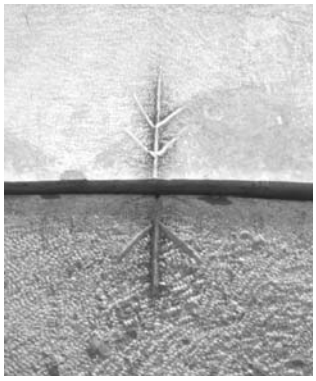


Figure 4 Masons' mark in the Unfinished Gate at Persepolis

Figure 5 Columns with horizontally fluted torus in Palace P at Pasargadae

rendering of bodies' with Ancient Near Eastern relief sculpture which he dubbed 'reinforced drawing'. He concluded that 'the sculptures from Susa and Persepolis embody the Greek conception of relief',[37] and attributes the change to Greek workmen. Nylander is dubious about this reasoning, however, and thinks that the differences between, for example, Achaemenid reliefs and Assyrian reliefs, may be explained by the results of working in different kinds of stone and the different purpose and intended location of the reliefs.[38] It is undeniable that there is more depth in Achaemenid sculptures than in, for example, Assyrian sculptures, and this can scarcely be attributed to the different qualities of the stone. Some Greek influence should, therefore, be conceded.

With stoneworking and some stylistic elements on the reliefs, then, there is clearly some influence from Ionia and Lydia. But it should not be exaggerated. For example, there may be some Greek influence in the fold patterns of the Persian dress, but the body contours beneath are not shown as they would be in Greek art. In this way the figures are typically oriental. Apart from Lydia and Greece, there is also significant influence from elsewhere, notably Assyria, as shown in the winged bulls, the gateway reliefs at Pasargadae, and the scenes of presentation to the king at Persepolis. Above all, however, the end-product is distinctively Iranian, and even Nylander, an apologist for Greek influence, admits that 'the soaring shafts [of the columns at Pasargadae] and the animals of the impost capitals are … profoundly Iranian' and 'the form and style of the draped figures [at Persepolis] are profoundly un-Greek'.[39]

III. The Minor Arts

Apart from sculpture, it is not easy to see Greek influence. Naturally there are a few Greek objects which have found their way to the eastern part of the Achaemenid empire, either booty or gifts brought back from the Graeco-Persian wars or luxury goods traded beyond the Greek world, but such items are not numerous. Here a word of caution is needed, namely that it is sometimes difficult to distinguish between Archaic and Classical Greek and Hellenistic material, with the latter becoming common after the conquests of Alexander. Amongst the material

Figure 6 Statue of Penelope from Persepolis (Tehran, National Museum). Reproduced by kind permission of Ebrahim Khadem-Bayat. All rights reserved

that clearly pre-dates Alexander, probably the best-known is an Early Classical marble statue identified as Penelope that was found in the destruction level at Persepolis (Cover and **Fig. 6**).[40] Also from Persepolis is a bronze fragment from the rim of a Greek cauldron showing a pair of horses (**Colour Pl. 2**),[41] and a fragmentary stone plaque with an incised design of a struggle between Herakles and Apollo that is thought to be a preliminary sketch for a painting in the Late Archaic Greek style,[42] and from nearby Istakhr, possibly taken there in antiquity, is a Late Archaic marble pillar with figures of lions and gorgons in high relief.[43] Examples of Greek objects from Susa are a griffin protome from a cauldron,[44] a bronze knucklebone with a dedicatory Greek inscription originally from the Temple of Apollo at Didyma (**Colour Pl. 3**),[45] and some Greek ivories.[46] This is not an exhaustive list,[47] and there are also references in classical authors to Greek statues being taken to Persia,[48] but we may safely assume that the number of Greek objects circulating in Persia was small, and as we shall see, they made little impact on Persian arts and crafts.

1. Pottery

We shall start our brief survey with that most ubiquitous of materials, 'common or garden' pottery. Surprisingly, it is still difficult to define the characteristics of Achaemenid-period pottery from Iran and Mesopotamia, and we are still a long way from being able to produce a proper classification. Progress is being made through various studies, both of pottery in Iran[49] and Mesopotamia,[50] but there is still a long way to go. Nevertheless, it is clear that Achaemenid pottery developed out of earlier Iranian and Near Eastern, particularly Assyrian, forms. It is true that there have been stray finds of Greek pottery. For example, there are fragments of Attic red-figure pottery from both Susa and Babylon,[51] and a sherd of Attic black-glazed ware of around the 5th century BC from Pasargadae.[52] However, these Greek sherds are few and far between and they had no influence on the local repertoires.

2. Glass

Achaemenid glassware has recently been conveniently summarised by Axel von Saldern[53] in the catalogue to accompany an exhibition on glass at the Miho Museum. He describes how the main forms are based on prototypes in precious metal and stone. These forms include carinated bowls, often with lobes or petals radiating from a central omphalos or rosette, beakers, and rhytons, the most famous of which has a protome in the form of a bull being attacked by a lion. It was found by Ali Sami at Persepolis.[54] Von Saldern is in no doubt that the tradition of glass manufacture in Achaemenid Persia is directly descended from the earlier traditions in Assyria and Phoenicia.

3. Metal Vessels

Vessels in precious metal have only rarely been found in Iran and Mesopotamia, but the forms are well-known from representations on the Apadana reliefs at Persepolis and from finds in outlying parts of the Persian Empire, such as Asia Minor, Thrace, Egypt and the Caucasus. The main forms, the carinated bowl with flared rim (phiale), the beaker also with flared rim, the bent-horn rhyton with animal protome,[55] and the amphora with animal-shaped handles, are all of Near Eastern origin and owe little or nothing to Greek influence. The phiale, as demonstrated long ago by Luschey,[56] is the development of an Assyrian form, and even where there is elaborate applied or embossed decoration the latter is generally drawn from the repertoire of motifs common in the Persian empire. In the Oxus Treasure there is one silver phiale, with central rosette and radiating petals, and a gold omphalos bowl with embossed figures of winged lions standing on their hind legs.[57] The rhytons with animal protomes have their origins in the animal-headed vessels that were widespread in the Near East in the pre-Achaemenid period, particularly in Assyria.[58] One of the best-known examples is a silver gilt bent-horn rhyton in the British Museum obtained in Erzincan in eastern Turkey.[59] It is thought possibly to come from Altin Tepe.[60] The handles that are fitted to Achaemenid amphorae are generally in the form of composite creatures, usually winged. Exceptional is a handle in the Oxus Treasure that is simply in the form of a leaping ibex,[61] but a silver handle from a hoard found at Babylon is more typical in that it shows a winged bull.[62] Such fanciful creatures are clearly Near Eastern in inspiration. A pair of silver handles in Paris and Berlin in the form of winged ibexes are sometimes cited as evidence for Greek influence in that they have heads of satyrs on the attachments,[63] but as these pieces are unprovenanced they can contribute little to the present debate.

4. Coins

As yet we have made no mention of Greek coins, which were circulated widely in the east even after the introduction of Persian coinage in the reign of Darius. As is well-known, the Persian gold *daric* and silver *siglos* (Greek for shekel, the same weight as a half-stater) were introduced at Sardis, inspired by the earlier lion and bull forepart coins of Croesus. The most familiar Persian issues show a half-figure of Darius and a kneeling archer. However, these Persian issues seem to have circulated mainly in the west, and Greek coins remained popular in the east. For example, an Athenian coin was used to seal an early 5th century BC tablet at Persepolis,[64] and Greek coins have also been found in a number of hoards, including the currency hoard found at Babylon by Hormuzd Rassam in 1882.[65] As well as some Persian

and Phoenician coins, there were Greek coins from Athens, Samos and Aegina. From the same hoard came the silver amphora that we referred to earlier. A number of Greek coins are also associated with the Oxus Treasure. It is likely that in the east, at least, Greek coins were prized for their bullion value rather than as tokens of exchange in their own right. Whatever their precise use, however, they must have served to disseminate Greek images and motifs, but there is no evidence that these had any impact on contemporary Achaemenid art.

5. Ivories

The ivories from Susa that Amiet[66] has identified as being of Achaemenid type form a quite distinct group. They can usually be easily distinguished from contemporary Greek ivories,[67] of which there are also examples from Susa, and they belong to a Near Eastern tradition that makes no concessions to Greek art.

6. Textiles

Carpets and textiles of the Achaemenid period are best represented in the frozen tombs at Pazyryk in Siberia.[68] The elaborate patterns and motifs reflect the original nomadic background of the Persians. Patterned textiles and hangings are also shown on the Persepolis reliefs; they belong to an Iranian tradition, and owe nothing to Greek art.

7. Seals

One of the few areas where Greek influence can be plainly seen is in glyptic art, but this influence is far from being universal and is most obvious in areas such as Western Anatolia. In Iran and Mesopotamia, there are particularly large collections of seal impressions on the Treasury Tablets and Fortification Tablets from Persepolis[69] and on tablets in the Murashu archive from Nippur.[70] The vast majority of the impressions, both from cylinder and stamp seals, may be categorised as Achaemenid court style. They are oriental in character, following the traditions of Elamite, Assyrian and Babylonian seals, and cover such topics as contest scenes (**Fig. 7**), hunting scenes and religious scenes, often with the addition of the winged disc motif (**Fig. 8**). Mark Garrison has even distinguished a Persepolis 'fortification style', which owes nothing to Greek influence.[71] The same sort of picture emerges from a recent study of the nearly 100 Achaemenid cylinder seals in the British Museum collection.[72]

To find examples of Greek influence, we need to look first at the so-called 'Lydo-Persian pyramidal seals'[73] which were popular in Persian court circles and at Sardis. Some of these seals are inscribed with Lydian names. Many of them have the typically oriental motif of the Persian king fighting a lion or other beasts, but some of them have Greek motifs such as Herakles. These pyramidal seals sometimes find their way further east: there are a few examples from Iran itself, and there are a few sealings from Persepolis with stamps from pyramidal seals.[74]

In addition to the Lydo-Persian pyramidal seals, there is also a distinctive group of scaraboid-shaped stamp seals or gems that are called 'Graeco-Persian' and are thought to have been made in workshops in Anatolia, in the 5th–4th centuries BC. They are most common from sites in Turkey, but there are isolated examples of seal impressions of this style on tablets from Persepolis. Thus, the impression of the seal of Gobryas dated to 499 BC and showing two lions attacking a stag is classified by Boardman as Graeco-Persian.[75] Many of these Graeco-Persian seals display a degree of

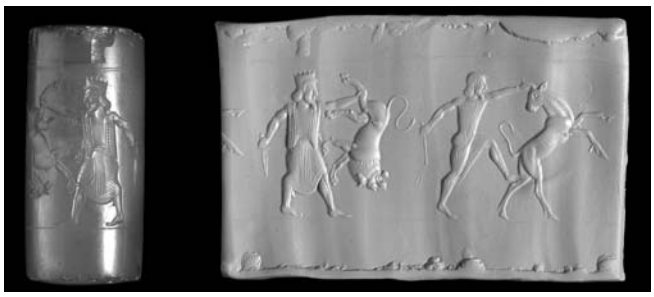


Figure 7 Cylinder seal from Borsippa showing contest scenes (British Museum ANE 89337).

Figure 8 Chalcedony cylinder seal showing a Persian fighting a hoplite (British Museum ANE 89333).

naturalism not usually found in Oriental works of art, and many of them combine Greek and Persian motifs, such as Greek and Persian warriors. The compositions, too, are more Greek than Near Eastern in character showing for example single figures such as a hunter, or a dancer, or a scantily-clad woman.[76]

Apart from these two groups of seals, Boardman also suggests that metal finger rings with engraved bezels 'follow the Greek trend, even though the subjects may have been Persian'.[77] There is a ring impression with a thoroughly Greek design showing a youth on a chariot on a clay sealing from the Treasury at Persepolis.[78]

In fact, there may have been a number of seals of actual Greek manufacture in circulation, as shown by a discovery at Ur. Thus in 1932, Sir Leonard Woolley found in a Persian period terracotta coffin at Ur a collection of almost 200 clay sealings, thought to have been collected by a seal engraver.[79] The majority of the impressions are of Assyrian, Babylonian and Achaemenid Persian origin, but there were also more than 20 impressions of gems and rings in the Greek style, most of them probably of Greek manufacture, as well as impressions of Greek coins. The seal impressions include a woman wearing a chiton and himation sitting on a man's knees, Hermes being crowned by a woman again in Greek dress, and a naked Herakles, holding a club and trampling on a lion. The fact that such Greek seals and sealings were known in the central part of the Persian empire does not mean, however, that they had any influence on local glyptic styles. The evidence suggests that they did not.

8. Jewellery

Achaemenid jewellery is characterised by forms that include a wide range of animal-headed bracelets, elaborate circular earrings, and textile ornaments in the form of striding lions. The various types have most recently been collected together by Ellen Rehm.[80] Amongst the best-known pieces are the gold ibex-headed bracelets from Pasargadae (**Williams, Colour Pl. 3**)[81] and the gold bracelets and torques in the Oxus Treasure usually with animal-head terminals.[82] Nearly all these forms derive from earlier Near Eastern traditions.

Of particular distinction in the Achaemenid period is the range of polychrome jewellery. Here, pieces of jewellery such as bracelets, torques, earrings, pectorals, buttons and beads have been inlaid with stones of different colour, glass, faience and perhaps enamel. It used to be thought that these techniques were developed in Egypt, and were passed from there to Achaemenid Persia, a theory supported by the fact that Darius cites Egyptian goldsmiths in his foundation charter.[83] The recent discovery of the tombs of the Assyrian queens at Nimrud, however, is throwing new light on this question. The vast collection of jewellery from the tombs contains a number of finely-marked inlaid pieces,[84] suggesting that such techniques were already well-known in Assyria or adjacent regions of the Ancient Near East. They could, then, have been passed to Iran, directly or indirectly, from Assyria. In either event, whether the techniques were developed in Egypt or in the Ancient Near East, there is no reason to postulate Greek influence. Amongst the best-known examples of polychrome jewellery from the Achaemenid period are the torque and the pair of bracelets all with lion's head terminals, and a pair of earrings and a pair of buttons from a tomb on the acropolis at Susa (**Williams Colour Pls 5–8**);[85] earrings and a button from Pasargadae;[86] and, of course, the famous armlets from the Oxus Treasure with winged griffin terminals.[87] Bracelets like this are shown being presented to the king by four of the delegations on the Apadana reliefs at Persepolis, and Xenephon describes in the *Anabasis* how armlets were amongst the gifts that were highly prized at the Persian court. These Oxus Treasure armlets are typical examples of Achaemenid court style art.

Comparable to the Oxus Treasure armlets are two armlets from the so-called 'Ardebil Treasure'[88] now in the Miho Museum in Japan.[89] Here the terminals are in the form of winged goats rather than griffins, but the armlets are similarly omega-shaped and the cavities for the inlays, both on the wings and on the bodies of the creatures, are very similar. The inlays in this case, incidentally, are of lapis lazuli, carnelian, turquoise and vitreous paste. Inlays can also be seen on the most spectacular item in the 'Ardebil Treasure', a magnificent torque with a pendant showing a battle scene (**Williams, Colour Pls 9–11**).[90] Michael Pfrommer, who wrote about this piece for the catalogue to accompany the opening of the Miho Museum in 1997, suggests that in addition to Egyptian influence, some Greek elements may be identified.[91] He refers to 'the narrow interstices between the leaves' on the frieze around the edge, and suggests that this detail has been 'most likely drawn from Greek 'egg-and-dart friezes'. He also analyses the decoration on the pendant which shows two horsemen and two foot soldiers. All the figures are in Persian dress, but the horseman on the right, threatened by the bow and arrow of his pursuer, throws up his arm in a gesture which for Pfrommer 'recalls Graeco-Persian rather than truly Near Eastern art'. These are certainly interesting points but not really convincing, and in discussing the style and technology of this torque and pectoral, Bernard and Inagaki[92] have drawn attention to the Egyptian, South Russian and native Iranian influences, all ingredients which one would expect to find in Achaemenid art. On the back of the pendant is a crudely incised Greek inscription which should apparently be read as 'one mina, 6 drachmas'.[93] This is presumably a record of the weight of the object, which would equate to 458g. This compares with a present weight for the torque and pendant of 422.5g, and the difference might be accounted for by the fact that some further pendants and inlays are now missing. Although this inscription is in Greek, however, it is not an indication of Greek influence, as it is dated on palaeographic grounds by Paul Bernard[94] to the last decades of the 4th century BC or the first part of the 3rd century BC (*c.* 325–275 BC). It could, then, have been scratched onto the pendant after the conquests of Alexander, perhaps as part of an accounting or stock-taking exercise.

9. The Oxus Treasure

Any attempt to assess the extent of Greek influence on Achaemenid minor arts must inevitably take account of the Oxus Treasure, arguably the most important hoard of material to have survived from the Achaemenid period. The treasure was found between 1877 (or even 1876) and 1880 on the north bank of the River Oxus in what is now Tadjikistan, probably at a site called Takht-i Kuwad.[95] Altogether there are about 180 items associated with the treasure, mostly in gold and silver, and about 1,500 coins. Probably the hoard was the property of a temple. Most of the objects are indisputably in Achaemenid Persian style, or even in what is called Achaemenid court style, a formal style that was widespread in the empire and considered typical of the period. In this category we may put the two magnificent gold bracelets and the silver ibex handle that we have already referred to, as bracelets of this kind and amphorae with zoomorphic handles are shown on the Apadana reliefs at Persepolis being brought as presents for the king. Of the 51 gold plaques in the Treasure about half show figures wearing the so-called Median dress, a trouser-suit with felt helmet, and carrying barsoms.[96] Figures wearing the Median dress, a characteristic Iranian costume, also occur in the famous gold chariot. Most of the items in the Treasure, then, can be regarded as Achaemenid Persian in style and execution, but there are small groups of objects that do not fit into this mould. Thus there are some objects that have affinities with Scythian art,[97] and there are a few items that show Greek influence.

Amongst them is a silver statuette of a youth, naked except for a gilded headdress in the Persian style (**Colour Pl. 4**).[98] This nudity is quite alien to Persian tradition, and must be attributed to Greek influence. There is little naturalism, however, and it is very unlikely that the statuette was manufactured by a Greek. There is also a silver statuette, partially gilded, showing a figure with long Persian dress and diadem, perhaps a king.[99] He holds a barsom. His costume has folds executed in the same manner as figures on the Persepolis reliefs, which some scholars attribute to Greek influence, but just because the style of the dress-folds may ultimately be Greek in origin, we cannot assume a Greek origin for this figurine. On the contrary, it is clearly an Achaemenid Persian product. More characteristically Greek is a chalcedony scaraboid showing a contest between two warriors, that was already recognised by Dalton as being of Greek workmanship (**Fig. 9**).[100] Then, of the ten gold signet-rings with engraved bezels in the Oxus Treasure, two have Greek designs, showing respectively Herakles (**Colour Pl. 5**) and two women playing a game (**Colour Pl. 6**),[101] and are probably Greek products. I have commented earlier that Boardman believes gold signet-rings to derive from a tradition that is ultimately Greek, but he acknowledges that the designs are often Persian, such as an Oxus Treasure ring showing a woman seated on an elaborate chair.[102] Among the other material from the Oxus trasure, Pfrommer sees the gold scabbard (**Colour Pl. 7**) as a Hellenistic product, citing

Figure 9 Oxus Treasure chalcedony scaraboid showing contest between two warriors (British Museum ANE 124014).

for example the posture of the horses which he believes to be Greek, but in a recent article Stronach has argued convincingly that it is an Achaemenid Persian product dating between the reigns of Darius I and Artaxerxes II.[103]

There is, then, very little obvious Greek influence in the Oxus Treasure, and if as a case-study it is typical for the central part of the Persian empire, it is clear that there was minimal Greek influence in Persian arts and crafts.

IV. Conclusions

To sum up, we have not succeeded in identifying much in Achaemenid art and material culture that is attributable to Greek influence. Certainly there is some Greek, specifically Ionian, influence visible in the stoneworking and building techniques at Pasargadae and Persepolis, particularly Pasargadae. In the minor arts, however, it is difficult to identify Greek influence, as opposed to items that may have been manufactured in Greek or Greek-influenced workshops, such as seals.

The evidence from the texts is contradictory. We have seen that in his foundation charter at Susa, Darius lists foreign workmen including Ionians, Carians and Lydians. There is also a Persepolis tablet dealing with wine transactions that is written in Greek.[104] Also, according to Diodorus Siculus, just before his capture of Persepolis, Alexander was visited by a large group of about 800 mutilated Greeks who had been deported from their homes and made to specialise in certain skills or crafts (Diodorus XVII.69.2-9). All this would seem to imply that there were a number of Greeks working in Iran in one capacity or another,[105] but the Elamite tablets from the Treasury refer to Ionians on only four occasions.[106] As the latter texts are probably our most reliable source, we should probably be cautious and guess that Greeks working in Iran were an isolated rather than a common phenomenon.

The whole process of influence may have been one of mutual interaction. Certainly there is some Greek, specifically Ionian, influence at Pasargadae and Persepolis, but on the other hand there may be some Persian influence in Greece.[107] This might extend even to the Parthenon itself, which Margaret Cool Root believes should be understood as an imperial monument.[108] She suggests that 'the Parthenon frieze [bears a] striking resemblance to the Apadana reliefs at Persepolis' and that the similarities between the two monuments can only be explained by 'conscious emulation of the Persian programmatic vision'.[109] Even the most ardent Iranophile, however, might find this a bit far-fetched.[110]

Lastly, a word of caution may be appropriate. Although Greek influence on Achamenid Persian arts and crafts appears to be minimal, there is no place here for dogmatic opinions. Above all we should remember that studies of Achaemenid material culture are still in their infancy and we are constantly being surprised by new discoveries.

Abbreviations

Boardman 1994: J. Boardman, *The Diffusion of Classical Art in Antiquity* (London, 1994)
Boardman 2000: J. Boardman, *Persia and the West: an Archaeological Investigation of the Genesis of Achaemenid Art* (London, 2000)
Dalton 1964: O.M. Dalton, *The Treasure of the Oxus* (3rd edn, London, 1964)
Nylander 1970: C. Nylander, *Ionians in Pasargadae* (Uppsala, 1970)
Stronach 1978: D.B. Stronach, *Pasargadae* (Oxford, 1978)

Notes

1 Nylander 1970, n. 37 on p. 17.
2 R.G Kent, *Old Persian: Grammar, Texts, Lexicon* (2nd edn, New Haven, Connecticut, 1953), 142–4, DSf.
3 Boardman 1994, 36–7, inclines to the view that this refers to the glazed brick panels, but if this is so, it is difficult to see what the role of the Babylonians would have been, even though the techniques of making polychrome bricks in Susa and Babylon were different. See also P.R.S. Moorey, 'Material aspects of Achaemenid polychrome decoration and jewellery', *Iranica Antiqua* 33 (1998), 155–71, esp. 156–8 and Boardman 2000, 130–1.
4 G.P. Carratelli, 'Greek inscriptions of the Middle East', *East and West* 16 (1966), 31–36, esp. 31–34; Stronach 1978, 105, n. 163; M.C. Root, *The King and Kingship in Achaemenid Art* (Acta Iranica 9; Leiden, 1979), 10; Boardman 1994, 37; Boardman 2000, 131. One of these inscriptions is dated by Carratelli to the late 6th – early 5th century BC, and another to the early 5th century BC.
5 E. Herzfeld, *Iran in the Ancient East* (Oxford, 1941), 251, pl. LXXII; Boardman 1994, pl. 2.23. For further references, see J. Curtis and I. Finkel, 'Game boards and other incised graffiti at Persepolis', *Iran* 37 (1999), 45–8, esp. 48, n. 3.
6 G.M.A. Richter, 'Greeks in Persia', *AJA* 50 (1946), 15–30.
7 J.M. Cook, *The Greeks in Ionia and the East* (London, 1962), 127; id., *The Persian Empire* (London, 1983), 163.
8 Boardman 2000, 134, believes he was from Phocis in Central Greece rather than Phocaea in Ionia as suggested by Cook 1962 (n. 7), 127.
9 Boardman 1994, 39, comments that 'to regard Achaemenid art as, in some degree, provincial Greek, is absurd, and there can be no warrant for attaching Greek artists' names to Persian styles'.
10 Herzfeld (n. 5), 239, 247, 274.
11 Nylander 1970.
12 For other possible signs of Greek influence, see Stronach 1978, 20, 42–3, 72–3, 104.
13 We are dealing here only with the principal and generally agreed points of contact. Many others have been noted, but not necessarily accepted by other scholars. For example, Richter (n. 6), 18–23, also sees Greek influence in the rendering of hair and beard, the way in which the profile eye is shown as seen from the front, and the representation of the eyebrow as a ridge. Here, however, Margaret Cool Root (n. 4), 9, points out that 'for the stylistic treatment of eye and hair there are close parallels in neo-Assyrian art'. Then, Boardman argued that the juxtaposition of white and black stone at Pasargadae to create a decorative effect was possibly Ionian in inspiration, an argument accepted by G. de Francovich. However, Nylander believes it is difficult to prove that this bichromatism is part of a Greek contribution (Nylander 1970, 143, with refs; see also Stronach 1978, 73), and there is increasing evidence in the Near East for the use of stones of contrasting colours, most recently at the Assyrian site of Ziyaret Tepe in Turkey: T. Matney *et al.*, 'Archaeological excavations at Ziyaret Tepe, 2000 and 2001', *Anatolica* 28 (2002), 47–89, fig. 27. Boardman also believes that the bead-and-reel mouldings on the Persepolis columns show Greek influence: Boardman 1994, 31; Boardman 2000, 77. He further suggests that the human figures in the doorways to Palace S at Pasargadae have feet that are sculpted in Greek style, but they are so poorly preserved that it is not really possible to draw any meaningful conclusions: Boardman 2000, 104.
14 Nylander 1970, 28, 53.
15 Nylander 1970, 53–6.
16 Nylander 1970, 61.

17 Nylander 1970, 61.
18 Nylander 1970, fig. 10a.
19 Nylander 1970, fig. 10b.
20 Nylander 1970, 66.
21 Nylander 1970, 67.
22 V. Place, *Ninive et l'Assyrie* (Paris, 1867–70), vol. III, pl. 70.4–5.
23 G. Loud and C.B. Altman, *Khorsabad, 2. The Citadel and the Town* (Chicago, 1938), 16.
24 A.H. Layard, *The Monuments of Niniveh* (London, 1850), vol. II, 20, 254, note.
25 W. Andrae, *Der Anu-Adad-Tempel in Assur* (Leipzig, 1909), 90, fig.88.
26 Stronach 1978, 39–43; Boardman 2000, 53–60.
27 Nylander 1970, 94–5, fig. 31b.
28 Nylander 1970, 95–6, fig. 32.
29 Nylander 1970, 84–6, figs 26–27; Stronach 1978, 20.
30 Nylander 1970, 139–42, fig. 48; Stronach 1978, 126; Boardman 2000, 102.
31 Nylander 1970, 139–42, fig. 48.
32 E.g. Nylander 1970, n. 211; Stronach 1978, 21–2; M. Roaf, *Sculptures and Sculptors at Persepolis* (Iran 21; London, 1983), 90–3; Boardman 2000, 117–19.
33 Herzfeld (n. 5), 237.
34 W.K. Loftus, *Travels and Researches in Chaldaea and Susiana* (London, 1857), fig. on p. 397 = J.E. Curtis, 'William Kennet Loftus and his excavations at Susa', *Iranica Antiqua* 28 (1993), 1–55, fig. 3.
35 Nylander 1970, 103–8, figs 36–7; Stronach 1978, 84–5; Boardman 1994, 31.
36 E.g. Richter (n. 6), 17–8; Nylander 1970, 132–5, fig.46; Boardman 1994, 33–4; Boardman 2000, 85.
37 H. Frankfort, 'Achaemenian sculpture', *AJA* 50 (1946), 6–14, esp. 9.
38 Nylander 1970, 130–2.
39 Nylander 1970, 109, 138.
40 E.F. Schmidt, *Persepolis II: Contents of the Treasury and Other Discoveries* (OIP 69; Chicago, 1957), pls 29–30; Boardman 1994, 38–9, pl. 2.25; Boardman 2000, 111, pl. 3.32.
41 Schmidt (n. 40), pls 38–9; Boardman 2000: 68, 136–7, pl. 4.8.
42 Boardman 2000, 132–3, pl. 4.4.
43 Boardman 2000, 137, pl. 4.10a–b.
44 J. Boardman, *The Greeks Overseas* (London, 1980), 108; Boardman 2000, 137.
45 Boardman 1980 (n. 44), 108, fig. 125; Boardman 2000, 137.
46 P. Amiet, 'Les ivories achéménides de Suse', *Syria* 49 (1972), 167–91, 319–37, esp. 324–9. Boardman believes that the ivories illustrated in Amiet pl. III.5, pl.V.2a–b and fig. 55 on p. 332 are also of Greek manufacture (Boardman 2000, n. 45 on p. 241).
47 There is also, for example, a fragment of sheet bronze with figural decoration from the Treasury at Persepolis. It was identified by Gisela Richter as 'Argivo-Corinthian' of the first half of the 6th century BC; she compares it with the arm-bands of shields from Persepolis and elsewhere: Schmidt (n. 40), 67, pl. 31.1.
48 Boardman 2000, 138.
49 E.g. W.M. Sumner, 'Achaemenid settlement in the Persepolis plain', *AJA* 90 (1986), 3–31.
50 D. Fleming, 'Eggshell ware pottery in Achaemenid Mesopotamia', *Iraq* 51 (1989), 165–85; SJ. Simpson, 'Wider implications of the Achaemenid period ceramics', in: D.Baird *et al*. (eds), *Excavations at Kharabeh Shattani* II (Edinburgh, 1995), 142–6.
51 C. Clairmont, 'Greek pottery from the Near East', *Berytus* 11 (1954–56), 85–141, and *Berytus* 12 (1956–58), 1–34, nos 303, 320, 341–3, 345; Amiet (n. 46), fig. 38; R. Koldewey, *The Excavations at Babylon* (London, 1914), 240; Boardman 2000, 137, 240, notes 41–2.
52 Stronach 1978, 185, pl. 174e.
53 A. von Saldern, 'Achaemenid glass', in: *Ancient Glass: Catalogue of Special Exhibition at the Miho Museum* (Miho Museum, Japan, 2001), 213–5.
54 R. Ghirshman, 'Notes iraniennes XI: le rhyton en Iran', *Artibus Asiae* 25 (1962), 57–80, fig. 26
55 This form was transmitted from Persia to Greece rather than *vice versa*: see H. Hoffmann, 'The Persian origin of the Attic rhyta', *Antike Kunst* 4 (1961), 21–6, and more recently S. Ebbinghaus, *Rhyta with Animal Foreparts in the Achaemenid Empire and their Reception in the West* (Oxford D.Phil. thesis 1998), 233–82.
56 H. Luschey, *Die Phiale* (Bleicherode am Harz, 1939).
57 Dalton 1964, nos 18–9.
58 J.E. Curtis, 'Animal-headed drinking cups in the Late Assyrian period', in: R. Dittmann *et al*. (eds), *Variatio Delectat. Iran und der Westen. Gedenkschrift für Peter Calmeyer* (AOAT 272; Münster, 2000), 193–213.
59 Dalton 1964, no. 178.
60 G.D. Summers, 'Archaeological evidence for the Achaemenid period in Eastern Turkey', *Anat. Stud.* 43 (1993), 85–108, esp. 96.
61 Dalton 1964, no. 10.
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63 Richter (n. 6), 23; Boardman 2000, 188–9, pl. 5.70a–b.
64 Boardman 1994, 39; Boardman 2000, 240, note 32.
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67 But see note 13.
68 S.I. Rudenko, *Frozen Tombs of Siberia: the Pazyryk Burials of Iron Age Horsemen* (Berkeley and Los Angeles, 1970).
69 M.B. Garrison and M.C. Root, *Seals on the Persepolis Fortification Tablets I: Images of Heroic Encounter*, 2 vols (OIP 117; Chicago, 2001).
70 R.L. Zettler, 'On the chronological range of Neo-Babylonian and Achaemenid seals', *JNES* 38 (1979), 257–70.
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72 P.H. Merrillees, forthcoming. There are, however, occasional examples of Greek influence. For example, a cylinder seal from Borsippa showing a king struggling with a lion and a hero fighting with a bull is often thought to show Greek artistic influence: Collon (n. 71), 91–3, no. 428. See also Zettler (n. 70), 260–1.
73 J. Boardman, 'Pyramidal stamp seals in the Persian empire', *Iran* 8 (1970), 19–45; Boardman 1994, 40, 43.
74 Boardman 2000, 168.
75 Boardman 1994, pl. 2.23a; Boardman 2000, 165–6, pl. 5.23.
76 Boardman 1994, pl. 2.23e, g–h.
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78 Boardman 2000, pl. 5.33.
79 D. Collon, 'A hoard of sealings from Ur', in: M.-F. Boussac and A. Invernizzi (eds), *Archives et Sceaux du Monde Hellénistique* (BCH Supp. 29; Paris, 1996), 65–84.
80 E. Rehm, *Der Schmuck der Achämeniden* (Münster, 1992).
81 Stronach 1978, pls 146–7. Elsewhere in this volume, Dyfri Williams has suggested that the Pasargadae bracelets are of Cypriot manufacture; see Williams, this volume, p. 110.
82 Dalton 1964, pls XVII–XX.
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84 M.S.B. Damerji, *Gräber assyrischer Königinnen aus Nimrud* (Mainz, 1999); M.M. Hussein and A. Suleiman, *Nimrud: A City of Golden Treasures* (Baghdad, 2000).
85 P.O. Harper, J. Aruz and F. Tallon, *The Royal City of Susa: Ancient Near Eastern Treasures in the Louvre* (New York, 1992), nos 171–3, 178–9.
86 Stronach 1978, pls 148, 150a, 156a, 157a–b.
87 Dalton 1964, no.116.
88 This material is unprovenanced and 'Ardebil' is a dealer's provenance. For what it is worth, the dealer who sold it to the Miho Museum informs me (pers. comm.) that the Treasure was found at Khalkhal near Ardebil in Iranian Azerbaijan. Apart from the armlets and the torque, associated with the Treasure are two pairs of gold bracelets with lion-head terminals, one pair with single lion's heads and the other pair with double lion's heads: T. Umehara, *Miho Museum: South Wing* (Miho Museum, Japan, 1997), nos 42–3.
89 Ibid. no. 39.
90 Ibid. no. 38. On this pectoral, see also Williams, this volume, p. 111.
91 M. Pfrommer, in: Umehara (n. 88), 87–8.
92 P. Bernard and H. Inagaki, 'Un torque achéménide avec une inscription grecque au Musée Miho (Japon)', *Académie des Inscriptions et Belles-Lettres: Comptes Rendus des Séances de l'Année 2000 Novembre-Décembre* (2000), 1371–437; P. Bernard and H. Inagaki, 'Un torque achéménide avec une inscription grecque au Musée Miho (Japon)', in: *Treasures of Ancient Bactria*, catalogue of special exhibition at the Miho Museum 18th August–15th December 2002 (Miho Museum, Japan, 2002), 207–10.
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97 J.E. Curtis, and M. Kruszynski, *Ancient Caucasian and Related Material in the British Museum* (British Museum Research Publication no. 121; London, 2002), nos 169–77.
98 Dalton 1964, no. 4; Boardman 1994, 103–4, pl. 4.35.
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103 M. Pfrommer, pers. comm.; D.B. Stronach, 'On the date of the Oxus gold scabbard and other Achaemenid matters', *Bulletin of the Asia Institute* n.s. 12 (1998), 231–48.
104 R.T. Hallock, *Persepolis Fortification Tablets* (OIP XCII; Chicago, 1969), no. 2; J.M. Balcer, Review of J. Hofstetter, *Die Griechen in Persien* (AMI Supp. 5, Berlin 1978), in *Bibliotheca Orientalis* 36 (1979), 276–80: appendix.
105 For a list of Greeks living in the Persian Empire, including Iran, see Hofstetter and the review of this book by Balcer (n. 104).
106 Stronach 1978, 105.
107 See, for example, the bell-shaped column bases on the Athenian stoa at Delphi and in the Thesmophorion at Delos: M.C. Root, 'The Parthenon frieze and the Apadana reliefs at Persepolis: reassessing a programmatic relationship', *AJA* 89 (1985), 103–20, esp. 116, 118. Persian influence in Greece in the 5th century BC is now the subject of an extensive study by Margaret Miller: M.C. Miller, *Athens and Persia in the Fifth Century BC* (Cambridge, 1997).
108 Root (n. 107), 115.
109 Root (n. 107), 104, 108.
110 For a contrary view, see Boardman 2000, 217.